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THE WARRENS OF NEW ENGLAND AND THEIR FRIENDS

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GROSSE POINTE, MICHIGAN

FORTY years ago Sir William Osler[1] said to the students of McGill: "While medicine is to be your vocation, or calling, see to it that you have also an avocation, — some intellectual pastime, which may serve to keep you in touch with the world of art, of science or of letters. Begin at once the cultivation of some interest other than the purely professional. . . . No matter what it is — but have an outside hobby. . . ."

Horace Walpole wrote: "Nothing gives us so just an idea of an age as genuine letters; history waits for its last seal from them." To even the least imaginative there is a never-ending source of interest and curiosity in the contemplation of letters and documents written by great personages of the past and present. It is not reading history; it is living it.[2] It is not examining faded writings on limp old paper; it is being with the writer as the letter is penned. We can slip back across the centuries and leave behind us this present materialistic world. Read in the spirit that it should be read, it is a book of memories that sweeps time away. That is only one of the joys of possession.

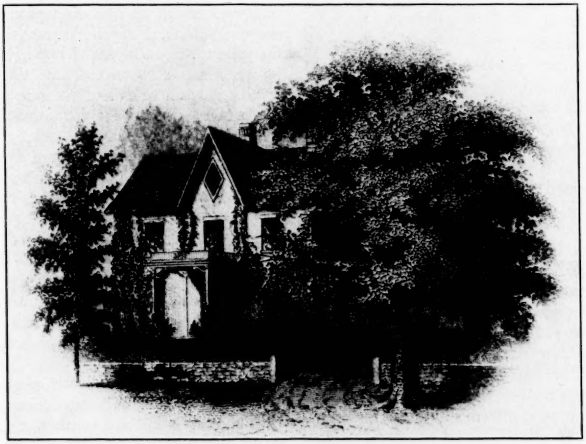

FIGURE 1. *Warren House, Roxbury.*

There are many men in medicine

> . . . who never sing
> But die with all their music in them.[3,7]

Their names will not go down the avenues of the world with renown, but their simple lives have created in their small spheres better and happier days for those with whom they have come in contact. Letters from many of these are in my collection.

As I turn the pages of *my* book of memories, the year 1792 summons many a figure from my as-

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sociative memory. I turn to old New England of post-Revolution days, where lived John Warren, the first of that line of doctors destined to go down in the history of American medicine as pioneers. His ancestor, John Warren, a fellow passenger with Governor Winthrop, sailed from England in the *Arbella*, arriving in Salem, Massachusetts, June 12, 1630.[3] His grandson Joseph built the family home in Roxbury (Fig. 1) where the first Dr. John Warren was born.

John Warren (1753–1815)[4–9]

In his early years, indifferent to studying, John did not learn to read until he was ten years old. At the grammar school in Roxbury he applied himself more assiduously, and acquired sufficient learning to enable him to enter Harvard College at the age of fourteen, where he was entirely dependent on his own resources for maintenance. Little is known of his life at Cambridge except that he became a good student of the classics and acquired a facility in speaking the Latin language, which was essential to him later in communicating with many foreigners, both lay and professional, with whom the political issues of the times brought him in contact. His diligence and a tenacious memory enabled him to stand well in his classes during the whole college course. Even at this early age, he showed an interest in the study of anatomy and, by his efforts, an association of students was formed for the purpose of cultivating that study. He took the degree of Bachelor of Arts in 1771 and immediately began the study of medicine with his brother Joseph, some twelve years his senior.

Joseph Warren was the first surgeon in America to use ligatures instead of scarring wounds with the actual cautery, and was the first in Massachusetts to devote himself wholly to obstetrics. On April 19, 1775, having ridden hastily out to Dedham to ascertain that he was not urgently needed for an approaching confinement, Joseph mounted his horse and hurried to Concord, where he arrived in time to direct the pursuit and harassment of the British forces as they retreated to Charlestown. On June 14, he was commissioned a major general, but three days later, before his commission was made out, he took part as a volunteer at the battle of Bunker Hill and died from a wound in the head.

When John Warren was only twenty years of age, he settled in Salem and associated himself with Dr. Edward Augustus Holyoke. This was the year of 1773, when it is said the tea was thrown overboard in Boston Harbor, and tradition has it that Warren took active part in the demonstration. About this time he joined a militia regiment in Salem commanded by Colonel Pickering and became its surgeon. Two years later, with the Revolution in progress, he first learned of his brother Joseph's death and hurried to Bunker Hill, where, while seeking for the body, he received a thrust from the bayonet of a sentinel, the scar of which he bore throughout his life.

Dr. Holyoke became one of his warmest friends. Aided by this influential patron and winning his own way by his personality and evident ability, he developed a practice which was second only to that of his sponsor. One might infer that he hoped eventually to inherit Dr. Holyoke's practice, but the irony of fate intervened, for the old gentleman lived to see a century turn the corner.

Since Dr. Warren's anatomical researches and studies aroused the curiosity of his friends, he gave a few private demonstrations for their instruction. In 1780, he successfully gave a course of dissections to his colleagues in the Military Hospital, which was situated in a pasture at the corner of Milton and Spring streets, in the rear of the present Massachusetts General Hospital. Here he was senior surgeon until the close of the war. At that time there existed a strong popular prejudice against dissections; therefore, these exercises were conducted with the greatest secrecy. In the following year, they were more openly accepted and the students of Harvard University were permitted to attend. It was during this year and for the first time in America that Dr. Warren performed the operation for disarticulation of the shoulder joint, with complete success. Early in his professional life he performed one of the first abdominal sections recorded in this country. This operation consisted in the opening and evacuation of a dermoid cyst in the left hypochondrium. The patient recovered.

Through bequests previously made to Harvard University, there existed foundations for a professorship of anatomy and surgery. No person had as yet appeared whose achievements and knowledge in these fields were sufficiently great to entitle him to fill these important chairs. Dr. Warren was an excellent lecturer, and according to Oliver Wendell Holmes, who was later the professor of anatomy: "The driest bone of the human body became in his hands the subject of animated and agreeable description." President Willard perceived how much the interests of the university might be promoted by the talents of Dr. Warren, and in 1783 the first medical institution in New England was established, with Dr. Warren in the chair of anatomy and surgery, a position which he continued to occupy for thirty years. To fill this

chair was a herculean task, for, when unable to go from Roxbury to Cambridge by ferry, he had to drive a circuitous road of twenty miles. With the time thus entailed, in addition to his three hours of lecturing, and his practice, he was more than busy. Strangely enough he did not receive his M.D., an honorary one, until 1786. At that time the exercises of the medical school were held in Holden Chapel (Fig. 2) in the College Yard, and continued there for more than a quarter of a century.

Dr. Warren was one of a group who founded the Massachusetts Medical Society, incorporated in 1781, the first body in Massachusetts to establish a standard and issue a license to practice, a requisite which has come down to the present day. Two years later he delivered the first Fourth of July oration from the balcony of the State House in Boston, probably the oldest public building in America. The next year, with several other doctors, he established a smallpox hospital at Point Shirley and in 1792 inoculated more than fifteen hundred persons. He recognized six years later that yellow fever was non-contagious. In 1810, by his efforts and those of his colleagues, the medical branch of the university was moved to Boston. His most notable contribution to literature was a paper, appearing in 1813, entitled "A View of the Mercurial Practice in Febrile Diseases," in which he referred to the treatment of many of the prevailing diseases of that period, such as measles, "throat distemper," consumption, dysentery, spotted fever and spinal meningitis.

He was the father of seventeen children, the eldest of whom was John Collins Warren and the youngest Dr. Edward Warren, his biographer. We note from this biography that he was a man of ardent temperament and agreeable social qualities, and that his frankness, candor and hospitality were conspicuous traits.

For some years before his death he was subject to attacks of angina pectoris, and in 1811 he suffered a slight paralysis of the right side, which never entirely disappeared. Four years later, when only sixty-two years of age, this patriotic and public-spirited physician died of an acute illness, having faithfully continued to visit his patients up to within a few days of the end. He was remembered as "a presence to be felt and known."

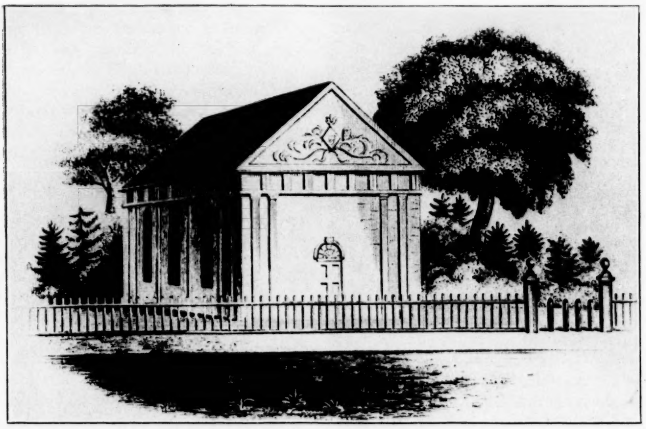

FIGURE 2. *Holden Chapel, Cambridge.*

JOHN COLLINS WARREN (1778–1856)[4, 6, 8, 10–12]

It would be well today if all members of the medical profession and also those engaged in business would read the beautiful and noble "Dedication" of *Letters to a Young Physician,* addressed to John Collins Warren by his friend James Jackson, than which there is "nothing finer in the medical literature of our time."

On the death of John Warren, his eldest son became Hersey Professor of Anatomy and Surgery at Harvard University. While it may be questioned whether his natural abilities as a teacher were as great as those of his father, he was undoubtedly a more highly educated man, having had the advantage of foreign study, and having been familiar with the teachings of the immediate

pupils of the celebrated John Hunter of Guy's Hospital, London. Shortly before leaving Paris after a sojourn of several months, he received an invitation, or order, from Napoleon to join the French army which was then organizing in Italy. His father, however, was anxious for his return and, obedient to his filial duty, Warren turned his back on his desires and came home.

As early as 1799, realizing the value of anatomical specimens as an aid to medical teaching, he brought with him from Europe a few models and preparations. These formed a nucleus, which he gradually increased during the first half of the last century, until his collection became justly celebrated and was visited by physicians and students from far and near. Later this collection was given to the Harvard Medical School, where it was placed in the Warren Anatomical Museum. Body-snatching flourished at this time, but to what extent the corpses were procured by the connivance of officials, we do not know. Today an enlightened civilization recognizes the necessity of providing cadavers. Anticipating this by several years, Dr. Warren bequeathed his own body to the school, and his skeleton was prepared and placed in the museum, where it may be seen today.

In 1823 he purchased three acres of land, and with the aid of public subscription secured funds for the erection of Bunker Hill Monument, the cornerstone of which was laid by Lafayette and dedicated by the notable oration of Daniel Webster. Two years later, Dr. Warren was one of a committee appointed to draw up an act on dissection, and on February 28, 1831, the first anatomical law was passed in the United States, preceding the first in Great Britain by one year. Dr. Warren was one of the first surgeons in America to operate for strangulated hernia but met with great opposition, both from the friends of the patients and from the medical men. He was prominent also in the establishment of the American Medical Association, and in 1849 became its third president.

On October 16, 1846, occurs this entry in his journal: "I did an interesting operation this morning while the patient was under the influence of Doctor Morton's preparation to prevent pain. The substance employed was sulphuric ether." This laconic entry is the only reference made to the most important and dramatic event in the history of medicine in America. The operation was performed in the amphitheater of the Massachusetts General Hospital, then in the old Bulfinch Building (Fig. 3), the ether being administered by William T. G. Morton (1819–1868), an American dental surgeon.

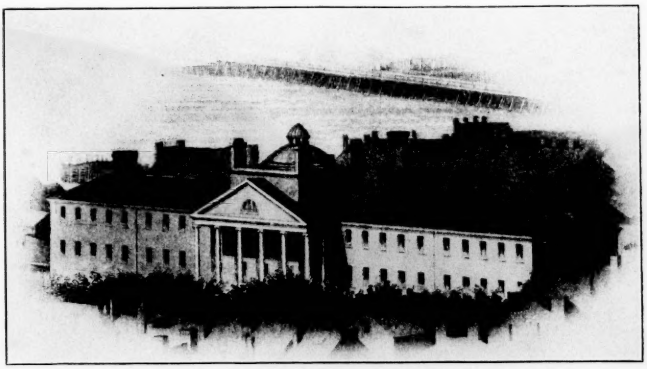

FIGURE 3. *Massachusetts General Hospital.*

After Dr. Warren had resigned from the Harvard Medical School and the Massachusetts General Hospital, he was able to spend more time in his paleontological work. Gradually this amazing life drew toward its close, and on May 4, 1856, at the age of seventy-eight, the end came after a brief and painless illness. Oliver Wendell Holmes said: "Whatever place he acquired or maintained no man can say that he did not earn it and keep it by his own fair labor."

JONATHAN MASON WARREN (1811–1867)[4, 6, 8, 13, 14]

The third generation was represented by the second son of John Collins Warren, who was born in the house at 2 Park Street, Boston. In

1820 he entered the Boston Latin School, the oldest school in the United States (founded in 1632), and remaining there through the full term graduated with his class in 1825. After studying two years with a private tutor, he was admitted to the sophomore class of Harvard College, but at the end of three months, because of ill health, he was obliged to leave. He went to Cuba to recuperate, and in the spring of 1828 returned to begin his medical studies under the tutelage of his father. Mason, as he was called, retained his associations with the Harvard class of 1830, receiving the degree of Master of Arts in 1844. Five years later he became a member of the Phi Beta Kappa Society. It was the custom of the time, dating from the period when the medical school was still at Cambridge, for the students to serve an apprenticeship, and the Warren home was the general gathering place. Near the front entrance a room with a sanded floor was provided for the purpose of study, and another was given over to the students for their meals. Gradually this practice yielded to the more modern system. In the fall of 1830 Dr. Warren entered his name as a student at the medical school on Mason Street, from which he graduated in 1832 at the age of twenty-one.

In March of the same year, Dr. Warren sailed from Boston for Europe on the ship *Dover,* which stopped en route at Charleston, South Carolina, and at the end of May he reached Liverpool, where he found an epidemic of cholera raging. After visiting the clinics of Astley Cooper and Charles Bell in London, and Syme and Liston in Edinburgh, he arrived in Paris in the fall. In the band of American students who gathered there between the years of 1820 and 1840 were enrolled the majority of the most celebrated teachers and leaders of American medicine during the middle of the nineteenth century, notable among whom were Jackson, Bowditch, Holmes, Shattuck "and many more whose names on earth are dark." This group was known afterwards as the "pupils of Louis." Following two winters of study in Paris, Dr. Warren visited Dublin in the spring of 1834, where Kennedy was master of the lying-in hospital and Macartney was presiding over his interesting museum at Trinity College. The winter of 1834–1835 was spent in Paris, where he watched Dieffenbach, on a visit from Vienna, perform his rhinoplastic operations. He also learned from Roux his method of operating for cleft palate, an ailment with which his own name was destined later to be intimately associated. In June, 1835, he returned home and prepared to begin his professional career.

When his father left for a visit to Europe in 1837, he entrusted a large practice to his son's care. Mason was eminently successful and became prominent, both as a medical and later as a surgical practitioner, for he was well qualified for these duties by a sound education, backed by good judgment and enhanced by a magnetic personality.

On April 30, 1839, he married Anna Caspar, daughter of Benjamin William Crowninshield, congressman and at one time Secretary of the Navy under Madison.

In 1843 he published his first article on staphylorrhaphy, an operation in which he was the pioneer in this country, the method which he devised being substantially that which is employed today. A full account of this operation is given in his book, *Surgical Observations and Cases,* published in 1867, in which he refers to one hundred operations performed by him for fissure of the soft and hard palate. He also performed the first operation in America for the restoration of the human nose.

In February, 1846, Dr. Warren was elected one of the visiting surgeons of the Massachusetts General Hospital, and on October 16 of the same year assisted his father in the operation which was destined to be known as the first public demonstration of surgical anesthesia. A few weeks later he substituted in place of Morton's apparatus the cone-shaped sponge that was used to administer ether at the hospital for the next twenty years.

Though never robust, Mason Warren seems to have permanently suffered from the shock of a train accident which occurred on his return from a meeting of the American Medical Association in New York. This sent him to Europe twice in the following years. In 1864 he delivered the annual address before the Massachusetts Medical Society on "Recent Progress in Surgery," which summarizes well the status of surgery immediately preceding the antiseptic era.

He was senior surgeon of the Massachusetts General Hospital for the several years preceding his death from cancer of the gastrointestinal tract; he died in the very house in which he was born fifty-six years before. He was survived by his wife, four daughters and a son, John Collins Warren. Dr. Warren was a man of sensitive mind and distinguished bearing. He combined a cheerful disposition with an understanding which made him popular with patients and friends alike.

John Collins Warren II (1842–1927)[4, 8, 15–18]

The two discoveries — anesthesia and antisepsis — that have had the most profound influence on medical science came within the lifetime of John

Collins Warren, the son of Jonathan Mason Warren. The discovery of ether anesthesia was made when he was but a child, yet the controversies which followed it extended into the period of his early medical career, and he remained to the last a supporter of the claims of Dr. W. T. G. Morton as its real discoverer. In 1869 Dr. Warren visited Lister in Glasgow, and made a study of his methods of employing antiseptics in surgical operations. On his return to Boston he assumed an active part in the introduction of these methods at the Massachusetts General Hospital.

The microscopic study of pathologic material derived from operations was at this time in its infancy. Dr. Warren was one of the first in this country to develop the practical application of this study, not only for the benefit of the individual patient but also for the investigation of surgical disease. During the Civil War, while still a student, he served as a medical cadet in the Union forces, and there developed an interest in and a knowledge of surgical infections, which years later led to the writing of *Surgical Pathology and Therapeutics,* his most notable literary accomplishment.

Loyalty and devotion to the Massachusetts General Hospital and to its traditions were bred in the very fiber of Dr. Warren's being. Through all the stages of promotion from house pupil to senior surgeon, he gave to the hospital the best he had. As a surgeon he was courageous, resourceful and thorough; he was admired and loved alike by his patients and his assistants. His Sunday ward visits when he was a senior surgeon were never to be forgotten. Each case on the wards was reviewed and discussed, all with a nice formality and kindly courtesy that was an inspiration to the group of assistants and younger colleagues who made it a point to attend these occasions. His deepest interest was in the surgery of tumors, and it was in this subject that he made his greatest contribution to the advancement of surgical knowledge and practice, notably in cancer of the breast. In 1896 he was chosen president of the American Surgical Association. He held the post of Moseley Professor of Surgery in the Harvard Medical School from 1899 to 1907, when he became emeritus.

A clear, systematic thinker, widely read in surgical literature and endowed with a happy faculty for apt illustration by anecdote or example, Dr. Warren made an admirable teacher of surgery. His influence was felt by many generations of students in the medical school and the hospital. The time and attention he gave to the preparation of his lectures and clinics served as a standard to his younger assistants, and the readiness with which he sacrificed his personal comfort or pleasure to this purpose was an inspiration to them, and a fair indication of the great respect in which he held his duties and privileges as an instructor of medical students.

On his retirement from active hospital service in 1905, Dr. Warren gave up his private practice and devoted himself unremittingly to the promotion of the many interests with which his varied life had brought him in contact. Chief among these was the Harvard Medical School. When it became necessary to move the school from the inadequate buildings on Boylston Street, it was to him and to Dr. Henry P. Bowditch that there came the vision, the faith and the ability to conceive the magnificent project for the present buildings on Longwood Avenue, and to secure the great fund needed for their construction and endowment. We may rejoice that Dr. Warren at least lived to see this vision materialize, as one after another of the hospitals and laboratories necessary to the completion of this great medical center came to occupy their places in accordance with the original plan. Even the dormitory for medical students, a gift from Harold Vanderbilt, which Dr. Warren was the first to advocate, but which at that time seemed so remote as to be beyond all expectation, came into being and was actually opened before his death.

In 1899 a sum of money was left by the will of Caroline Brewer Croft for the investigation of the cure of cancer, and Dr. Warren was named a trustee of the fund. This bequest led to the organization of the Cancer Commission of Harvard University, of which he was chairman for many years. Under his guidance, and chiefly because of his interest in this subject and of his happy faculty for securing and sustaining the interest of others, the commission added immeasurably to its resources and extended its activities. The early funds for the construction of the Collis P. Huntington Memorial Hospital for Cancer Research were obtained almost entirely by Dr. Warren's efforts. The dedication in 1922, by the President and Fellows of Harvard College, of the adjoining laboratory building, to be known as the J. Collins Warren Laboratory, was held by him to be the supreme honor of the many accorded to him in his professional career.

Dr. Warren had an almost boyish simplicity and directness, and a sense of humor which contributed in no small degree to the facility with which he established himself in the hearts of those about him. Neither his honors nor his accomplishments but rather his character and personality left that indelible impression on all with whom he came in

contact. His sincerity, his unfailing courtesy, — reminiscent of a generation earlier than his own, — his indefatigable industry and his loyalty were the striking qualities which endeared him to his patients, his students and his colleagues.

Born of a family whose name for more than a century had meant not only eminence in the medical profession but also the highest ideals of service to the community, carrying on this trust successfully with its manifold duties and its obligations and laying down the burden only after having seen the accomplishment of his most cherished ambitions: this is the epitome of the life of John Collins Warren II. In his sixty-one years of professional life, he sought and found opportunity to maintain the enviable heritage of the traditions of his illustrious forbears and to add materially to their brilliant record.

John Warren (1874–1928)[19–21]

With the death of Dr. John Warren, the elder son of John Collins Warren II, there ceased to be, for the first time in one hundred and sixty-four years, a Warren to minister to the medical necessities of New England. Beginning with the entrance into practice of Dr. Joseph Warren in 1784, members of this stock, for all but twelve years in direct lineage, had practiced and taught medicine in Boston. John's brother, a year younger, was christened Joseph, so that, in this fifth generation, the two brothers held the same simple names as the brothers of Revolutionary fame.

From his mother John Warren inherited his fair complexion and his great size. As a boy he grew so rapidly that at school and even at college he was unable to enter into athletics with any degree of merit and skill. His height made him a conspicuous figure and induced a certain amount of shyness and reserve. Beneath these traits and his dignified manner was a truly gentle and lovable nature which few, perhaps, were given the opportunity to appreciate. He prepared for college at Noble's School and entered Harvard with the class of 1896. After graduating he attended the medical school, as it was almost inevitable that he, with such ancestors, should follow the medical profession in one of its many branches. The practice of surgery held no attraction for him, so that after his graduation he became an assistant in the Department of Anatomy. He devoted himself enthusiastically to teaching, and to the improvement of its methods. When appointed associate professor in 1915, he began the formation of a teaching anatomical museum, available to the students at all times. This contains a series of frozen sections of the body and many illustrative dissections, each accompanied by a carefully labeled photograph. He raised a memorial fund for Thomas Dwight, a kinsman of the Warren family and former professor of anatomy, which consisted of a collection of anatomical specimens invaluable to the student.

From 1911 until his death he was the university marshal and was in charge at all Commencements, where he made a very imposing figure. During the war, he attended the first Plattsburg training camp and at once enrolled as a medical reserve officer. He was interested in collecting books having to do with the history of anatomy, and it seemed assured that he, like Osler and many others, would experience the lasting joy and interest of the bibliophile. It was not to be, for he died at the age of fifty-four just one year after his father had passed on. His collection, together with the entire medical library of the Warren family, is now at the Harvard Medical School. His interests, other than his work, were few; his tastes simple — long country walks, or, as some of us may remember, daily walks from his home to the school with coattails flapping and cane swinging. The latter, and his manner of clasping his belt with his thumb and rocking up and down on his toes while lecturing, his many idiosyncrasies of speech and his individual choice of words, will long be remembered by his students, and will keep him vividly before us as a true and scholarly gentleman, a masterly teacher.

Henry Ingersoll Bowditch (1808–1892)[22, 23]

Another name famed in the annals of medicine is that of Bowditch. Henry, the third son of Nathaniel Bowditch, the celebrated mathematician and navigator, was born in Salem, Massachusetts, in 1808. His boyhood was passed in the house still standing on Essex Street, next to the Old Witch House.

When he attended the Harvard Medical School, his chief instructor was James Jackson, a noble, wise and conscientious physician and an excellent teacher, who in those days stood at the head of his profession in Boston. Later, Dr. Bowditch was under his guidance as an intern at the Massachusetts General Hospital. In the spring of 1832, through the kindness of a generous father, he was enabled to go abroad to pursue his medical studies. In Paris at La Pitié, together with James Jackson, Jr., who died two years later, Oliver Wendell Holmes and Mason Warren, he "walked the wards" with Louis. He met and was entertained by Magendie, the physiologist, and later in England by Sir Astley Cooper, the surgeon. It was while in London that he met the young Olivia Yardley, who later became his wife.

On his return, Dr. Bowditch found a Boston seething under the tremendous denunciations of William Lloyd Garrison. Bowditch became an abolitionist, and aided in the initial steps which led to the final passage of the law of the Massachusetts legislature forbidding the use of the

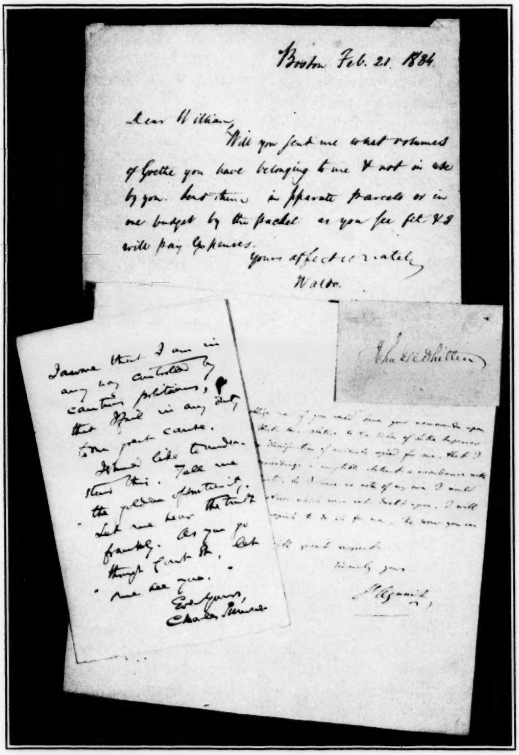

FIGURE 4. *Letters of Friends of Henry Ingersoll Bowditch. Reproduction from a collection to be given to the library of the Harvard Medical School.*

state and town jails for the detention of runaway slaves. Because of his activities along this line and others, he numbered among his friends James Russell Lowell, John Greenleaf Whittier, Ralph Waldo Emerson, Louis Agassiz and Charles Sumner (Fig. 4).

In 1879 he spent a few days in Washington at the National Board of Health meetings, where plans were discussed for the prevention of yellow fever, made possible by the $5,000,000 grant from Congress. Comparing the board's problems with present-day public ones, we note the similarity in human nature. Dr. Bowditch, in a letter to his son, tells of the many demands on the money:

> We would not let every two-penny township have its quota, as it is called, of the money put in our hands. Some of these men demanded that we should build them systems of sewers, etc., and because we would do no such thing, they have berated us. The national board, by aiding the local board and spending freely the nation's money, has prevented the spread of the fatal disease in the Mississippi Valley, and we shall probably be able *to return to Congress more than half the money allotted to us.*

Because of an ankylosed finger, the result of an infection, Dr Bowditch was forced out of the surgical field, so he resolved to specialize in diseases of the lungs and heart. Though opening the chest wall to remove accumulation of fluid had been done surgically from the time of Hippocrates, it was not until 1850 that Dr. Bowditch introduced aspiration or paracentesis by means of a small tube and a suction pump.

Dr. Bowditch lived a very active life, wrote many medical papers, carried on a large practice, was an ardent worker for the advancement of medicine, took part in medical meetings and was a voluminous correspondent until he died in 1892. He believed that a physician should be, so far as possible, a man of general culture and should not confine his knowledge to his profession alone, lest he become a man of one idea and of narrow vision. His philosophical words to his son Vincent may well be taken to heart:

> The chief advantage of your going abroad is to see the methods of medical men on the other side of the water; to find wherein they excel or are inferior to us. While medicine is your chief aim, remember that I want you to see and hear all that you can of art and music. I often think I have done more good to some weary patients by sitting down and telling them of a delightful European experience than by all the drugs I have ever poured down their throats.

Vincent Yardley Bowditch (1852–1929)[22, 25, 26]

Dr. Bowditch's son Vincent, a very good friend of mine, was born in Weston, Massachusetts. He graduated from the old Brimmer School in Boston and prepared for college at a private institution before entering Harvard, from which he graduated in 1875. He ranked high in his classes but found time to enjoy athletics. He was always popular with fellow students, and became chief marshal on Class Day. After three years at Harvard Medical School, and a year's service as a medical house officer at the Massachusetts General Hospital, he received his degree of Doctor of Medicine in 1879.

The ensuing two years were devoted to attending lectures and clinics in various European medical centers, but Dr. Bowditch did not lose sight of his father's admonition, for he was a frequent visitor at the operas, theaters and art galleries.

In 1889, interested in the proper treatment of pulmonary tuberculosis, he went to Goerbersdorf, Silesia, and visited the sanatorium of Dr. Herman Brehmer and afterward that of Dr. Dettweiler (Brehmer's pupil) at Falkenstein, near Frankfort, Germany. There was a difference of opinion as regards fresh air, rest and altitude in treating this disease. Here in America, at that time, it was believed that but one course was open — to send a patient "out West." Dr. Bowditch believed that the same results might be accomplished nearer home and, filled with enthusiasm, he established in 1891 the Sharon Sanatorium at Sharon, Massachusetts, with accommodations for nine women. Later he was instrumental in establishing Rutland Sanatorium at Rutland, Massachusetts, — the first state tuberculosis sanatorium in the United States, — and he held the position of attending physician for eight years from the opening to October, 1898. In both these institutions, his work served chiefly to prove that there was much benefit in being treated by proper methods of living. The excellent results attendant on his method attest the great value of his work there.

"Dr. Vin," as his young friends called him, was always abreast of the times, establishing a preventorium for children at Sharon and an occupational department at Rutland for those capable of working. He was a great friend of Dr. Edward Livingston Trudeau, who was a pioneer in tuberculosis, and who opened Saranac in the Adirondacks seven years before Dr. Bowditch opened Sharon.

Dr. Bowditch was president of the National Tuberculosis Association (1908–1919) and first president of the Massachusetts Tuberculosis League, founded in 1914. He died in Boston, at his home, December 20, 1929, of tuberculosis — the enemy to which he had given his life that he might overcome it in others.

His intelligence, his persistence in conquering obstacles, his high ideals, together with his delightfully uncomplicated and sympathetic nature, shared in contributing to the vigor and attractiveness of his personality. He was a frequent visitor at the Tavern Club; he was an ardent follower of the Boston Symphony Orchestra and, when his duties did not interfere, one could usually find him in his regular seat at the Friday afternoon concerts; he loved to sing and was well versed in the German lieder. The theater always intrigued him, and he kept abreast of the good current literature. In short, he was a gentleman of the old school and a distinguished figure in the intellectual life of Boston.

Henry Pickering Bowditch (1840–1911)[24]

This nephew of Henry Ingersoll Bowditch was born in Boston and graduated from Harvard College in 1861. He was a major of the Fifth Massachusetts Cavalry, a Negro regiment, during the Civil War. Following his service he resumed his studies and graduated in 1868 from the medical school. He then spent three years studying with Claude Bernard in Paris and Carl Ludwig in Leipzig, where he wrote his paper describing the all-

or-none law of the heart muscle. On his return to this country in 1871, he served as assistant professor of the newly created Department of Physiology at Harvard, establishing for the first time in the United States a physiological laboratory for students. Five years later he was made full professor.

At this time the method of instruction in the Harvard Medical School underwent a radical change, the most important feature of which was the adoption of the so-called "course." Up to that time the students of the school were not classified according to the time spent in study, but each one was expected to select from the instruction offered such subjects as seemed to him best adapted to his needs. Thereafter the students were divided into classes, and the subjects pertaining to an education in medicine were classified as first-, second-, third- and fourth-year studies, an examination at the end of the year testing the student's fitness to advance from one class to the next. Under this arrangement physiology was classified as a first-year study; however, in recognition of its importance as an experimental science, it was accorded a position as an independent department of the school and a fairly commodious laboratory was provided by raising the roof of the North Grove Street building.

In 1899 Prof. Bowditch withdrew from the greater part of his work, and in 1906 he resigned from the George Higginson Professorship of Physiology. To him belongs the credit of first appreciating that the whole system of laboratory accommodations must be organized on a greater scale than had ever before been attempted, and in association with Dr. John Collins Warren II he devised a scheme along the broad lines on which the plans of the new school have been worked out. He proposed a group of buildings arranged somewhat on the plan of the modern German medical school, the various departments being housed in separate institutes. He acted on a committee with Dr. Warren, John D. Rockefeller, Jr., and the president of the University, Charles W. Eliot. Through the generosity of J. P. Morgan and John D. Rockefeller, Jr., a fund was started, and in 1903 land was broken for the erection of the present buildings of the Harvard Medical School.

Prof. Bowditch's last years were saddened by the gradual limitation of his vigor and activity through the advance of paralysis agitans. But throughout the gradual decline, he accepted his fate with cheerfulness and with gentle consideration of those about him. He died at his home in Boston on March 13, 1911, and was survived by his widow, the former Selma Knauth, whom he had met in Leipzig, and a family of sons and daughters. One of the last times that he appeared in public was in Sanders Theater at the ceremony for the dedication of the new medical school buildings. The occasion was a memorable one, and Prof. Bowditch's impressive figure, clad in the scarlet robes of the Edinburgh doctorate, and seated at the front of the platform side by side with Dr. Warren, made a fitting center for the striking scene.

Prof. Bowditch cultivated his friendships in many happy ways, both at his home in Boston and at his summer camp in the Adirondacks. He possessed unfailing courtesy, fairness and good will, warmed by a delightful sense of humor. His ingenuity and effectiveness were manifest not only in physiological research but in matters of affairs. He possessed a rare combination of sober judgment and vigorous will — the qualities of a natural leader.

James Jackson (1777–1867)[27–29, 30, 31, 36]

The turning point in clinical medicine from idealism, speculation and theory to accurate and close observation came with the Hunters and Heberden, coincident with the American Revolution, so that when James Jackson received the degree of Bachelor of Physics from Harvard in 1802, the time was ripe for the development of modern medicine.

James Jackson's ancestors migrated to this country in the 1630's and were among the first to settle in Cambridge, a name chosen in honor of the ancient seat of learning in England, the intellectual parent of Harvard College. Thirty-eight Jacksons, all enlisting from the town of Newton, a suburb of Boston, fought in the armies of the Revolution, and fourteen of the descendants were in active service in the Union army during the Civil War of 1861.

Dr. Jackson's father, Jonathan, was born in Boston, and moved to Newburyport, a coast town north of Boston, after the death of his parents. He was a public-spirited individual and in 1775 was chosen a representative to the first Continental Congress. Later he was appointed United States marshal for the District of Massachusetts, then including Maine, and superintended the taking of the first census (1790) of that part of New England. For the five years preceding his death in 1810, Jonathan Jackson served as treasurer of Massachusetts and for three years as treasurer of Harvard College.

James Jackson was born in Newburyport in 1777. Later on moving to Boston he attended the Boston Latin School. His medical education commenced in his senior year at Harvard College, when

he attended lectures given by the medical professors. Then followed two years of apprenticeship with Dr. Edward Augustus Holyoke, of Salem, a remarkably able practitioner, during which time Jackson took the regular course of medical school lectures. In October, 1799, he went to London, where he studied with Astley Cooper, Woodville, famous in connection with smallpox vaccination, and other influential men. He renewed his acquaintance with John Collins Warren, library in Boston, and was thought by many to be the outstanding medical man of his day in America.

Dr. Jackson, a man of wide culture and remarkable mind, was one of the founders of the Massachusetts General Hospital, and for many years he occupied the chair of theory and practice of physic in Harvard. He was one of the first physicians in America to practice vaccination, and made important observations on the nature of typhoid

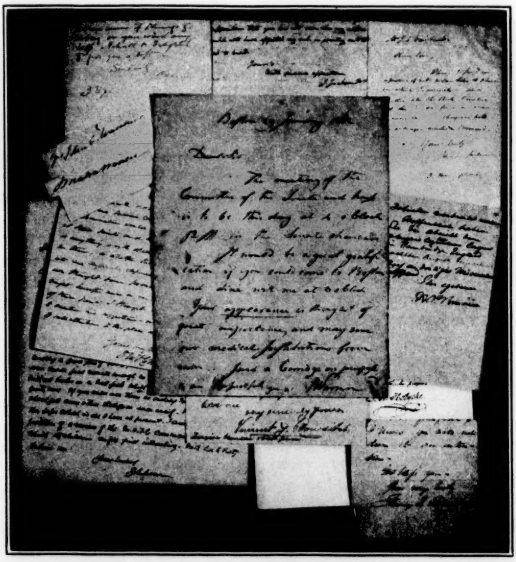

FIGURE 5. *Letters of Those Mentioned in This Article. Reproduction from a collection to be given to the library of the Harvard Medical School.*

which ripened into an intimate friendship lasting throughout the latter's life. Their names are united with the development of many progressive accomplishments.

For an American of that day Jackson's medical training was excellent, and furnished him with sound background to become a professor. As was the custom of the time, he started practice one and a half years before he received his degree. With John Collins Warren, he was largely responsible in 1803 for furthering the organization of the Massachusetts Medical Society, and in 1808 for preparing its pharmacopoeia. He was also associated with the earliest attempts to form a medical fever. In 1816 he published a syllabus of his lectures in practice. After his wife's death, he was joined by his son Francis and his family, with whom he lived until his death at ninety years of age. The last year of his life he was an invalid, but until then his mind remained unimpaired. The *Memoirs* of his son and *Letters to a Young Physician* are his literary offerings other than his medical writings.

Oliver Wendell Holmes wrote:

> James Jackson, a man of serene and clean intelligence, not ever book-fed, truthful to the centre, a candid listener to all opinions, a man who forgot himself in his care for others and his love for his profession, by com-

mon consent recognized as a model of the wise and good physician. I have seen many noted British, French, and American practitioners, but I never saw the man so altogether admirable at the bedside of the sick as Doctor James Jackson. His smile was itself a remedy better than the potable gold and the dissolved pearls that comforted the praecordia of medieval monarchs. To visit with him was a medical education.

James Jackson, Jr. (1810–1834)[28–31, 35, 36]

James Jackson, Jr., whom Osler called the young Marcellus* among the physicians of this country, —"the young Marcellus, young, but great and good," — was the fifth child of James and Elizabeth Cabot Jackson.

From the earliest the boy was always cheerful and happy, never long depressed by trouble of any kind. Though industrious and given to systematic habits of study as a youth, he did not achieve any outstanding distinction for scholarship during his college career. Instead of striving for class honors, he devoted himself to a broader reading, and stored his mind with the valuable facts thus acquired. He graduated from Harvard in 1828 at the age of eighteen and then studied medicine under his father and attended lectures at the medical school, making free use of the clinical material at the Massachusetts General Hospital.

In 1831, when just past twenty-one years of age, he went to Europe to continue his studies in the hospitals of Paris, and there for two years under the personal guidance of the great master, Louis, — who had from the first become warmly interested in him and who stood to him ever after as "my second father and God knows that is a name I of all men cannot use lightly," — he observed and reported his observations.

He chose particularly to follow Louis at La Pitié instead of Chomel at Hôtel Dieu, because the former had not more than fifteen students and visited the wards in the daylight, thus giving him greater opportunity to listen with the stethoscope to more patients, whereas the latter was often surrounded by two or three hundred pupils and made rounds by candlelight one and a half hours before clear day. Jackson felt with Cervantes that "Knowledge of the disease is the beginning of healing."

Although but twenty-three years old and not yet possessed of his medical degree, James had won a reputation which an experienced physician might have envied. A brilliant career seemed assured to him, and a social life enriched by the affection of a host of friends. He reached home at the end of the summer of 1833, and received the degree of Doctor of Medicine from Harvard in February, 1834. He was then prepared to engage in practice and, as was the custom in those days, sent an advertisement to the public papers, which appeared on March 5. On the same day he fell ill with a dysentery, which proved fatal about three weeks later.

The blow to the father was a terrible one. But soon he began to collect material for a memoir to his son. In this book are presented his letters to his father, written during the winter of 1831–1832, which are almost wholly given up to enthusiastic descriptions of auscultation and percussion phenomena, histories of cases and arguments of diagnosis, interspersed here and there with illuminating remarks concerning his teachers, his surroundings and himself. From this correspondence, it is clear that the son and father exchanged *cliniques* in their communications as well as personal and domestic matters. There are also included a considerable number of cases of cholera, valuable contributions to the pathology of that disease which James had collected in Paris in the spring of 1832. There is nothing in medical biography so charming as this interchange of scientific interest between the young student, flushed with the excitement of his first great acquisition, and the sympathetic and receptive father in Boston, busy with a great practice and hospital and college duties.

The books were not offered for sale, but copies were sent by Dr. Jackson to his friends and many warm replies were received. My copy is addressed to "Reverend Sewell with Doctor Jackson's respects." About these memoirs, Dr. Henry Barton Jacob wrote: "I scarcely know any book which is more of an inspiration to the medical students, more of an incentive to hard work and to high ideals, than the little story of the life of this young man." Quoting Osler again, "I do not know in our profession of a man who died so young who has left so touching a memory." His name, too, will always be associated with the studies on emphysema, and he is the discoverer of the prolonged expiratory sound in early pulmonary tuberculosis. Greater than these was the influence he exerted on American medicine through his immediate influence on the rising members of the profession of his generation in the habit of thorough observations of the phenomena of disease in the living and in the dead.

Oliver Wendell Holmes (1809–1894)[32–34]

Another of the group which studied with Louis in Paris was Oliver Wendell Holmes, born August 29, 1809, at Cambridge, Massachusetts, one of the

*Marcellus married Julia, daughter of Augustus, after being adopted by Augustus. In line for the throne, he died at the age of twenty years, in 23 B.C. He was praised by Virgil.

"Brahmin caste of New England." From Phillips Andover Academy, he entered Harvard in the famous Class of 1829.

Turning to medicine, and convinced by a brief experience in Boston that he liked it, he went to Paris in March, 1833, to study. Returning to Boston at the close of 1835, filled with high professional ambition, he sought practice, but achieved only modest success because the grave Bostonians did not think him sufficiently serious. He won a prize, however, for professional progress and lectured on anatomy at Dartmouth. In 1843 he published his essay on the "Contagiousness of Puerperal Fever" which brought him bitter personal abuse, but in due time he was honored as the discoverer of a beneficent truth. The volume of his medical essays holds some of his most scintillating thoughts, his most shrewd observations, his most kindly interest in mankind.

In 1840 he married Amelia Lee Jackson, a cousin of James Jackson, and seven years later he was appointed professor of anatomy and physiology at Harvard, the duties entailing classes also in related departments so that as he said, he occupied "not a chair, but a settee in the school." This position he held until 1882. His lectures were fresh, witty and lively, so that the students were sent to him at the end of the day, when they were fagged, since he alone could keep them awake. In later years he made few contributions to medical knowledge; his eager impetuous temperament caused him to leave more patient investigators to push to ultimate results, the suggestions thought out by his fertile and imaginative mind.

We all know him for his *Autocrat of the Breakfast Table,* his "One-Hoss Shay" and his "Chambered Nautilus." Fortunately, Dr. Holmes's medical essays are reprinted with his works. Several of them are enduring contributions to the questions with which they deal; all should be read carefully by every student of medicine. The essay on "Homeopathy" remains one of the most complete exposures of that therapeutic fad. There is no healthier or more stimulating writer for students and young medical men. With rare humor, with unfailing kindness and with a delicacy of feeling peculiarly his own, he has permanently enriched the literature of the race.

Eight years before his death he made a triumphal tour of Europe and received many degrees. He died in 1894 and was buried from Kings Chapel, Boston, in the cemetery of Mount Auburn.

Search the ranks of authors since Elia, whom in so many ways Holmes resembled, and to no one else could the beautiful tribute of Landor be transferred with the same sense of propriety:

> He leaves behind him, freed from grief and fears,
> Far nobler things than tears,
> The love of friends without a single foe,
> Unequaled lot below.

15315 East Jefferson Avenue.

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PRESENT-DAY MEDICAL ECONOMICS*

An Informal Discussion

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BOSTON

IN 1928, Dr. William S. Thayer presented my name to the House of Delegates of the American Medical Association as a prospective member of the Council on Medical Education and Hospitals. The House duly ratified this suggestion, and since then I have followed carefully the business of the American Medical Association.

I found myself, ex officio, a member of the House of Delegates, and at my initiation into it at Portland, Oregon, in 1929, I attended a medical meeting unlike any other I had previously been to. Here I heard debated by delegates from all over the country a variety of subjects which hitherto had been taken pretty much for granted by my friends in Massachusetts, and yet which appeared to be of considerable concern to doctors from various other parts of the United States. It seemed peculiar, for instance, to bother over the fact that many colleges were beginning to conceive it their function to look after the physical welfare of their students and were establishing well-organized health departments. It seemed of little more than passing interest to be told that the cost of medical care was agitating the public and that in certain sections considerable criticism was being vociferously directed at the medical profession, the feeling being expressed that doctors themselves were largly responsible for the present unsatisfactory situation. Of course I knew that the Committee on the Costs of Medical Care had been organized, and I was acquainted with several of its members. I even looked forward to seeing its report. But I had not stopped to realize that this committee was financed by lay foundations, such as the Twentieth Century Fund, the Milbank Fund and the Rosenwald Fund, nor did I sense the profound influence that money played in the trend of medical philosophy. Since then my education has progressed. I have followed the proceedings of the House of Delegates with much interest, have sat regularly at its sessions and have acquired a kaleidoscopic impression of the confused state of American medicine, which I shall try to describe.

It is difficult to comprehend, if one is living in the midst of an economic thunderstorm, where the lightning strikes, what harm it does and what scars may be left when the storm passes over. Yet I think everyone will agree that since 1929, and the stock-market crash, the medical profession has survived a violent hurricane, and that in all probability medical practice will never again be quite what it was before the cyclone struck.

In 1930, notable changes had already begun to develop as an aftermath of what was going on in the world. An important event had recently taken place abroad. A public medical-service association had been established in England with a view to setting up a universal medical service, government-controlled and available to the entire population. This seemed a disturbing occurrence to certain farsighted people in this country who already knew that in Belgium a similar organization existed, and that doctors there were anything but happy working under it. New developments toward bureaucratic medicine were beginning to be seen here also; various corporations seemed to be entering the practice of medicine; public-health programs were expanding; veterans' legislation appeared to be excessively expensive; some $30,000,000 had been appropriated within the year to look after veterans of the World War, and it looked as if the federal government soon contemplated going into general practice, particularly as it was constructing hospitals to accommodate veterans suffering from diseases and injuries in no way related to war service.

It was somewhat comforting to learn that the Committee on the Costs of Medical Care had come out with three fundamental principles unanimously agreed on by the entire committee: the personal relation between physician and patient must be preserved in any effective system of medical service; the concept of medical service in a community should include a systematic and intensive use of preventive measures in private practice and effective support of preventive measures in public-health work; the medical service in a community should include the necessary facilities for adequate diagnosis and treatment. These three principles were entirely acceptable to the House of Delegates, since for years the American Medical Association had stood out strongly on the desirability of better medicine, and for maintaining the personal relation between doctor and patient.

The years 1932 and 1933, as one looks backward,

*Presented at the Cambridge Hospital, Cambridge, Massachusetts, January 16, 1940.

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were important to American medical economics chiefly because they marked the end of a Republican era in government and the beginning of a Democratic one, and because, politically speaking, they were years of pre-election jockeying. However, in 1932 the House of Delegates was informed that four hundred and thirty organizations in the country were offering or furnishing medical services on a contract basis, and thus it was apparent that experiments along such lines were being conducted busily enough. A new medical economic phenomenon also had appeared on the horizon. This was group hospitalization insurance. While the idea was comparatively new, it was growing rapidly. In fact, by 1933 more than thirty schemes had been proposed to provide for the prepayment purchase of hospital care.

The House of Delegates in 1932 and 1933 was a conservative body. I think that at each session the delegates felt that the financial losses which hospitals had suffered by depreciation in value of their endowments had led hospital trustees and superintendents to be willing to experiment with almost anything that might make both ends meet. In discussing group hospitalization plans in the early days, the opinion was often expressed that many of the proposals for the prepayment of hospital care were not altogether sound. Such proposals seemed on the whole to emanate from persons, not doctors, who were propagandists or promoters looking for profit. Little consideration was given to the personal relation between patient and physician. In certain of the plans, the insurance contracts tended to involve the services of the clinical pathologist, the anesthetist and the roentgenologist, with the implication that these services were at times being exploited to provide an income to the hospital by which to meet deficits in other departments.

And who could tell where the snowball of hospital insurance might roll or to what dimensions it might grow? How soon would the services of the surgeon, the obstetrician and the internist be included, and if so, what was to become of private practice and the personal relation between doctor and patient? How soon would someone in a well-padded political armchair say that voluntary hospital insurance was operating so successfully that compulsory insurance should be put in effect as soon as possible, and that this type of insurance should be placed in the hands of the federal authorities?

The year 1934 was an important one. Mr. Roosevelt had already been inaugurated as president. Shortly afterward, rumors began to circulate that the campaign for a socialized system of furnishing medical care to a large proportion of the population was about to begin. In June, President Roosevelt announced his intention to propose legislation toward greater economic security for the people of the United States, and indicated, as a primary objective, the care of the unemployed and the aged. A few months later he went on to say that closely related to the broad problem of livelihood was added the problem of security against the major hazards of life; hence, he planned to make definite recommendations which should cover benefits for children, for mothers, for the handicapped, for maternity care and for other aspects of dependency and illness. Very soon the original Wagner bill was introduced, a bill advocating cash payment in partial replacement of wage loss due to sickness, and government-controlled insurance for maternity and medical services.

The American Medical Association, before all this came about, had been studying the manner in which compulsory health insurance appeared to operate in those countries adopting it. So far as could be discerned, it did not, on the whole, operate too successfully. It appeared to place in government hands the practice of medicine; health insurance tended to become a political instrument used for the purchase of votes rather than an instrument for improving public health. The result was that the medical service rendered by health insurance tended to become perfunctory and to result in unnecessary treatment. The people who were insured were likely to try to get their money's worth by using doctors unnecessarily. Worst of all, the guidance of medicine, of research and of teaching was liable to fall under political rather than professional control, and this seemed dangerous to American medicine. For these reasons, early in 1935 at a special meeting, the House of Delegates opposed the Wagner bill and reaffirmed its opposition to all forms of compulsory sickness insurance.

The original Wagner bill was not passed, but another Wagner bill was to be introduced in 1939. Between 1935 and 1939 many things important to medical economics took place. From my own viewpoint, it seems to me that about this time a less conservative attitude in American medicine began to develop. At the meeting of the House of Delegates in 1935, we were told that there were on record seven hundred and forty-eight different schemes of contract practice, and that nearly two hundred different experiments were being conducted in different areas by county medical societies in an effort to organize a more equitable distribution of medical cost. These figures seemed to prove that a great deal of experimentation in medical economics was continuing. As one trav-

eled around the country and talked to doctors, one heard it said, again and again, that unless the medical profession developed a feasible plan for the care of the American people, state medicine was inevitable. So keen an observer as the late Dr. J. Tait Mason remarked that there were, at that time, three classes of doctors in the United States: those who felt that the American Medical Association needed better leadership and were inclined to turn up their noses at the way in which the Association was doing things; those a little more cautious who believed that a change in medical care was coming, but who hoped that all that was good and worth while in the present scheme of medical practice might be preserved; and finally, those who admired the conservatism heretofore displayed by the House of Delegates. To these latter men, who seemed to be in the majority, the economic crisis of the last few years had been an unhappy experience, inevitably focusing undue emphasis on the financial aspects of medical work, and leading to rash experimentation or to hasty judgment. These conservatives wished to see preserved, at all costs, the individual private practice of medicine, with free and open competition among physicians and the maintenance of the personal relations between doctor and patient.

Time marched on; restlessness was fomented, experimentation toward socialized medicine continued. In 1935, bills were proposed in seven states looking toward the establishment of compulsory systems of state health insurance, and in 1936 bills were introduced in two more states for the same purpose. In 1937 there appeared, under the auspices of the American Foundation and largely from the pen of Miss Esther Lape, a two-volume book, *American Medicine: Expert testimony out of court.* This book summarized a recent questionnaire circulated among medical men on the organization of medical care in the United States, and was a carefully assembled piece of work. Various problems were discussed in it: the adequacy or inadequacy of medical care, medical education, group practice, state medicine, health insurance and other kindred topics. No conclusions were drawn, but the general tenor of these volumes appeared to show that the present state of medicine was not entirely happy.

I have no idea how many people read Miss Lape's book nor how much influence it had. Probably it attained no general popularity, and was studied not so much by the man in general practice as by the professor in the habit of diffuse reading and abstract thinking, or by persons interested in the theory rather than the practice of medicine.

It seems to me, on the whole, that this book acted like an enzyme, increasing the irritation of the small group of doctors likely to read it who were by nature truculent, and either indifferent to or dissatisfied with the manner in which the American Medical Association did things. The upshot was that in the fall of 1937 a group of four hundred and thirty such physicians issued their "Principles and Proposals." The principles were four in number: that the health of the people is a direct concern of the government; that a national health policy directed toward all groups of the population should be formulated; that the problem of economic need and the problem of providing adequate medical care were not identical and might require different approaches for their solution; and that in the provision of adequate medical care for the population four types of agency were concerned — voluntary, local, state and federal agencies. The truth of these general principles being assumed, they were implemented by various proposals; preventive medicine should be emphasized; medical indigents should be cared for by public funds; medical education and research should be supported in part by the public treasury; public money should be made available to hospitals that rendered service to the medically indigent; in the allocation of public funds for hospital care, private institutions should be utilized to the largest possible extent; public-health services should be extended by evolutionary processes; and the whole function of the government in relation to health should be consolidated in one separate department.

The strength of the "Principles and Proposals" lay in the fact that they were advocated by honest men of the highest caliber, occupying positions of great responsibility, and with a reputation for leadership in their various provinces. The weakness lay in the fact that the ideas set forth by no means represented public medical opinion. Certainly the House of Delegates did not like them.

In 1938, the House of Delegates realized that new schemes for the organization and distribution of medical services were increasing rapidly, and by then was thoroughly conscious of the fact that the medical profession must play a part in seeking to solve economic problems in relation to illness. For at that time every thinking doctor realized that socioeconomic conditions had become inseparably interwoven with health and sickness and that medical practice had changed. The difficulty was to know exactly the wisest course to pursue.

The delegates felt certain that complete dominance of medical practice by government was unwise. To maintain a personal relation between patient and physician still seemed desirable. The country was so large that no two conditions of medical practice were alike in any two parts of it. No single experiment that had been conducted along the lines of hospital or group health insurance could serve as a model to the whole country.

Most plans on which information was available were conceived with the idea of offering low-cost medical services to special groups of persons. Thus there had grown up, in a comparatively short time and involving many people, a variety of insurance schemes: industrial medicine, health associations for groups of employees and their dependents, student health services, fraternal health associations and sundry other local health-insurance plans. Surveys made to throw light on what occurred in the way of results from these endeavors showed that good medical service cost, on the average, twenty-five to thirty dollars per person per year. It seemed hardly possible that any arrangement could lower this average cost and at the same time do good work. Practically all the plans boiled down to being no more than arrangements by which doctors were induced to sell their services to a promoter, who, in turn, resold these services to prospective patients. How happily the doctor came out under any of these systems was not altogether clear, though doctors working for salaries did not seem to complain.

In theory, the idea of collecting the average annual cost of medical services from each of a number of persons, in the hope of relieving a few, is delightfully plausible. There are, however, several objections to it. In the first place, plans that depend on underbidding, advertising or solicitation are hardly to be justified, but how is a promoter to drum up trade without the use of such devices? In the second place, to many doctors the free choice of physicians by patients is desirable, though not so desirable as it had seemed a few years ago, because one of the striking findings of insurance surveys was that only rarely did the persons insured seem to care much whether they could or could not select their doctor. However, plans of insurance which paid medical bills and which permitted free choice of physician and free choice of hospital seemed to be no more expensive and no less efficient than were more exclusive plans in which the choice of physician or hospital was limited. In the third place, a charge must be added to the average cost to each person insured to provide for the administrative expenses in any insurance plan, and the cost of overhead may easily involve a considerable sum. In the fourth place, it is impossible to calculate in advance a premium that will provide for the cost of new developments in medical science, the result being an inevitable collision sooner or later between the resources of the insurance system and the needs of the insured person for new and indeterminate amounts for expensive medical care. The insurance, therefore, might soon cost more than it was worth. In the fifth place, each individual who buys insurance is likely to try to get back his money's worth. In the sixth place, experience abroad has shown that voluntary organizations under medical control set up to perform the possible functions of a state system of medicine have always drifted, inevitably, into compulsory insurance under government control. A skeptic like myself feels, as he hears of a new and successful experiment in group medical insurance, that one more solid brick has been laid on which soon the government will build the superstructure of compulsory health insurance.

The House of Delegates, today, is a different body than it was in 1929, when I sat in it for the first time. A variety of changes have occurred to make the ordinary doctor conscious of the medical economic revolutions through which he has lived in the past decade, and thoroughly sensitive to many influences which were imperceptible a generation ago.

A new Wagner bill was submitted in 1939. It was an offshoot of the so-called National Health Conference held in Washington in July, 1938.

There was a special meeting of the House of Delegates in September, 1938, when the program of the National Health Conference was debated. The delegates decided that several features of the program were admirable; one was unacceptable. They were, for example, sympathetic to the idea of establishing a federal department of health with a representative in the President's cabinet. They believed in efficient and economical expansion of public health or maternal and child health services, only, however, so far as such expansion could not be successfully accomplished through the private practitioner. They believed in the expansion of general hospital facilities when need existed, pointing out the desirability of first using existing hospital facilities before erecting new buildings. They believed in the complete care of the medically indigent by tax funds administered by local governmental units. They accepted as useful the principle of hospital insurance, including hospital care only, and not including any type of medical care. They also accepted as useful the principle of cash indemnity insurance to cover the cost of emergency or prolonged illness, provided such schemes complied with state statutes and regulations to guarantee their soundness and the financial responsibility of their underwriters, and provided that they had the approval of the county and state medical societies under which they operated. They approved the principle of insurance against loss of wages during sickness. They did not approve of any system of compulsory health insurance.

When the Wagner Bill was finally written, it appeared a different bill than might have been

expected to develop from the results of the National Health Conference. It had a title which sufficiently stated its purposes: "A bill to provide for the general welfare by enabling the several states to make more adequate provision for public health, prevention and control of disease, maternal and child health services, construction and maintenance of needed hospitals and health centers, care of the sick, disability insurance, training of personnel and for other purposes." In brief, the bill provided federal subsidies through which to induce the states to undertake new activities, and to enlarge activities already under way in certain public-health and medical-service fields. A lot of hospital construction was to be undertaken. The bill proposed to spend $98,000,000 in 1940, $123,000,000 in 1941 and $334,000,000 in 1942. While no specific mention was made of compulsory sickness insurance, the measure introduced the principle of allotment of federal money to individual states for medical care, and was silent as to whether such care should be provided through a state medical service or by a system of state health insurance or by payment of services on a fee basis. (Closely related to this act was the Capper Sickness-Insurance Bill, contemplating a federal appropriation of $200,000,000 each year to induce the states to develop and maintain systems of health insurance.) None of the suggestions made as the result of the National Health Conference and supported by the House of Delegates appeared to have received much consideration. In fact, the bill appeared bizarre, and contrary in almost every way to the best interests of the health of the American people. The House of Delegates believed that each member of the American Medical Association should oppose it.

Thus, we reach the year 1940 with medical economics still in an unsettled state. The trustees have recently constructed a platform as a guide to indicate the trend which the American Medical Association believes should be followed in the development of health activities and medical care for the people of the United States. The platform appears fairly to represent what most doctors agree to. It is a simple affair. It advocates the establishment of an agency of federal government under which will be co-ordinated all medical and health functions of the government. It advocates the allotment of such funds as Congress may make available to any state in actual need for the prevention of disease, for promotion of health and for the care of the sick. It advocates the development of a mechanism to expand preventive medical services and to extend medical care for the indigent,with local determination of needs and local control of administration. It advocates the expansion of public-health and medical services in a manner consistent with the American system of democracy. It advocates the utmost utilization of qualified medical and hospital facilities already established. It advocates the continued development of the private practice of medicine. It deplores the introduction of methods such as compulsory sickness insurance or state medicine.

Possibly the last decade has done the medical profession good rather than harm. Certainly, doctors have grown more mindful of the social relations in their work and of the importance of medicine to public welfare. They have become more open-minded, less uncompromising, entirely willing to experiment with plans by which to take care of the indigent and to reduce the cost of medical care. They have become glad to co-operate with the Government in improving public-health measures. No longer are they too proud to face the fact that others besides themselves have a stake in the advance of medical education and medical research. The average doctor, however, still believes that medicine is an art and not a trade, that the personal relation between physician and patient is important and that any form of compulsory health insurance will retard the advance of medical knowledge. How much longer the medical profession will maintain its high ideals of self-sacrificing, uncommercial service is a question.

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THE DIAGNOSIS AND TREATMENT OF SIGMOIDAL POLYPS*

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IN RECENT years, considerable attention has been directed to cancerous lesions of the large intestine, and although different types of operations have been employed, the principle of radical removal has been accepted as yielding the best results. Insufficient attention has been paid to the diagnosis and treatment of intestinal polyps, the premalignant lesions, for which radical resections are seldom necessary. It is for this reason that we wish to present our experiences with 10 patients operated on for sigmoidal polyps during the last seven years. During the same period 156 patients with polyps of the colon and rectum were treated, so that the group considered in this paper represents but six per cent of the total cases. The surgical problems incident to treatment of polyps in the colon are quite different from the treatment of those occurring in the rectum below the pelvic peritoneal reflection. The method of treatment of the sigmoidal polyp is the same as that for those occurring in other portions of the colon, even though they are infrequent in the proximal portion of the large intestine.

Swinton and Warren§ have recently reported the above-mentioned series of 156 patients with benign and malignant polyps of the colon and rectum. During the period that these patients were observed, 827 patients were operated on for carcinoma of the colon or rectum. A careful study of these removed lesions showed that 120 (14 per cent) could be proved histologically to have arisen from benign mucosal polyps. In 35 per cent of the cases more than one polyp was found. The polyps were located in the rectosigmoid and rectum in 68 per cent, while in 32 per cent they were in or above the sigmoid colon; the latter group included all polyps found in portions of the colon removed for malignant lesions. Swinton and Warren in their study of these polyps were able to show all stages of the cellular changes incident to the development of true carcinoma.

The frequent occurrence of cancer in patients having congenital polyposis of the colon has long been recognized. In 1932 we proctoscoped 5 adults of one family between the ages of thirty-one and thirty-nine, and found 4 to have congenital polyposis. Three of these subsequently died of cancer, and a fourth died postoperatively following complete colectomy. Two patients had

TABLE 1. *Summary of Data in 10 Patients with Sigmoidal Polyps.*

CASE NO.	AGE	SEX	DURATION OF SYMPTOMS	PRESENTING SYMPTOM	MEANS OF DIAGNOSIS	OPERATION TYPE	OPERATION DATE	PATHOLOGICAL REPORT	FOLLOW-UP REPORT
	yr.								
1	48	F	3 yr.	Bleeding	Sigmoidoscopy, barium enema	Sigmoidotomy	12/7/32	Mucosal polyp	Operation for carcinoma of tranaverse colon on July 3, 1937; other polyps in January, 1939
2	68	F	9 mo.	Bleeding, diarrhea	Sigmoidoscopy, barium enema	Sigmoidotomy	10/28/33	Malignant adenoma	Well in January, 1938
3	63	M	3 mo.	Bleeding	Sigmoidoscopy	Sigmoidotomy	1/29/38	Adenocarcinoma in mucosal polyp	Well on March 15, 1939
4	37	M	2 yr.	Bleeding	Contrast enema	Sigmoidotomy	5/7/38	Mucosal polyp	Well on February 21, 1939
5	53	M	1 yr.	Bleeding	Sigmoidoscopy	Sigmoidotomy	5/9/38	Mucosal polyps with precancerous foci	Well on July 6, 1939; two other polyps fulgurated
6	70	M	6 mo.	Bleeding, obstruction	Clinical	Sigmoidotomy	9/2/38	Mucosal polyp with focus of malignancy	Well on April 20, 1939
7	75	M	15 yr.	Bleeding	Sigmoidoscopy	Sigmoidotomy	9/16/38	Mucosal polyp	Well on February 2, 1939
8	60	F	3 yr.	Bleeding	Clinical (sigmoidoscopy, twice negative; barium enema, twice negative)	Sigmoidotomy	10/27/38	Adenocarcinoma in polyp	Well on August 24, 1939
9	49	F	6 yr.	Bleeding	Sigmoidoscopy	Sigmoidotomy	3/11/39	Mucosal polyp	Well on July 26, 1939
10	35	F	3 mo.	Bleeding, diarrhea	Clinical (barium enema, negative)	Sigmoidotomy, supravaginal hysterectomy, left salpingo-oophorectomy	5/1/39	Mucosal polyp, endometriosis	Well on June 1, 1939

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§Swinton, N. W., and Warren, Shields: Polyps of the colon and rectum and their relation to malignancy. *J. A. M. A.* 113:1927-1933, 1939.

multiple malignant foci. Within the last six months we have had 2 patients with multiple cancers found at the time of operation, which we believe arose from different polyps. One patient had a carcinoma of the splenic flexure and of the sigmoid, while the second had a carcinoma of the cecum and of the transverse colon. The routine examination of resected specimens for carcinoma very frequently shows one or more polyps in addition to the cancer. A further point substantiating the occurrence of cancer in polyps has been observed in a comparison of the positions of polyps and of cancer. In the large series, 68 per cent of the polyps were found in the rectosigmoid and rectum and approximately 60 per cent of the carcinomas of the large intestine observed at the Lahey Clinic occurred in the same location.

Bleeding was the presenting symptom in all 10 cases with sigmoidal polyps. In 6 cases bleeding had been present for one to fifteen years. One patient had symptoms of a moderate obstruction because of the size of the polyp. A disturbance of bowel function is unusual and should suggest the presence of malignancy. The other symptoms presented by the patients in this series were due to the presence of other conditions.

The demonstration of polyps in the sigmoid colon may at times be quite difficult. The sa diagnostic methods that are used for malig lesions of the intestine must be employed. toscopic and sigmoidoscopic examinations of the greatest value, since other polyps ma visualized in the rectum and rectosigmoid, a frequently the sigmoid polyp will be seen. It quite important that these patients be properly p pared before one attempts to carry out sigmoi scopic examination. They should receive 30 60 cc. of castor oil the evening before examin tion. This is to be followed by cleansing enen the following morning. It is best to have the tient in an inverted position so that the rectos moid will become straightened by gravity and instrument can be passed into the lower sig Close examination of every portion of the mu is essential if the small sessile polyps are not to missed.

Following the sigmoidoscopic examination, with the benefit of the preparation stated above, a barium enema is given. If the presence of a polyp is suspected, a double-contrast air enema will probably be necessary in order to demonstrate the discrete polyp. One x-ray examination may not be successful in outlining the polyp, and in our experience repeated studies have at times been necessary. These two methods may not prove the presence of a sigmoidal polyp, even though the history of bleeding is strongly suggestive of its presence. In 2 of our 10 cases, abdominal exploration was carried out to demonstrate the presence of a polyp.

The methods of diagnosis, when taken with the clinical story, should be sufficient to exclude the other organic lesions that may be found in the colon. One of our patients was operated on with the diagnosis of cancer of the colon, and it is our belief that we cannot exclude cancer in any of these cases preoperatively. Ulcerative colitis, diverticulitis, endometriosis with obstruction, benign lesions and tuberculosis, as well as local anorectal conditions and amebic and bacillary dysentery, must be excluded.

The treatment of rectal polyps discovered by this routine investigation is a much simpler problem.

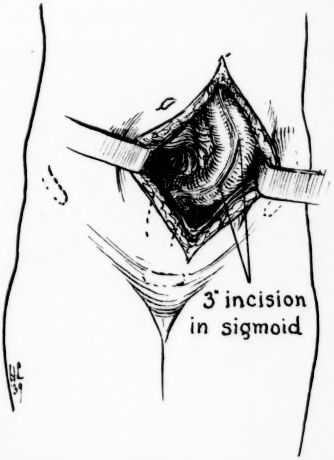

FIGURE 1.
The line of incision is made in the longitudinal band.

Those below the pelvic peritoneal reflection can be fulgurated under direct vision in one or more stages. The patients must be carefully examined subsequently in order to be certain that the mucosa is completely healed. It is our strong belief that all polyps in any part of the large intestine, irrespective of size, should be destroyed or removed. Those above the pelvic peritoneal reflection can be fulgurated successfully if great care is exercised to avoid perforation and bleeding. A long, pedunculated polyp must have the pedicle coagulated by the slow current in order to avoid hemorrhage. In 1 of our cases with a high rectosigmoidal polyp serious hemorrhage occurred, necessitating packing of the bowel and later fulguration; two transfusions were necessary for this patient. Perforation occurred in 1 case but did not result fatally. Signs

of peritoneal irritation are not uncommon, and all these patients should be hospitalized if fulguration is to be done for polyps above the reflection of the peritoneum.

The treatment of sigmoidal polyps is a more serious problem. Hemorrhage following sigmoidoscopic treatment is difficult to control at this level. The danger of perforation of the colon above the peritoneal reflection is evident. It is technically difficult to remove or destroy large sigmoidal polyps through the sigmoidoscope. The problem of differentiating the malignant and the benign polyp is difficult in this region. Because of these facts we believe that sigmoidal polyps should be removed at laparotomy. The 10 patients in our series had laparotomy with sigmoidotomy. Spinal anesthesia was used for all cases, with a 10 per cent Pontocaine solution — 14 to 18 mg. This type of anesthesia provides the best possible operating conditions.

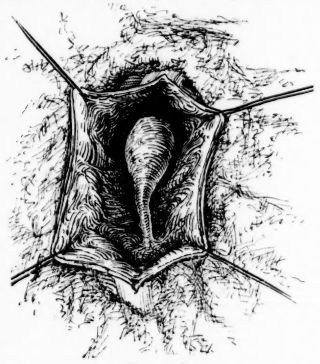

FIGURE 2.

Following the isolation of the operative field with gauze, the sigmoid is opened, thus exposing the polyp, with its base.

Thorough exploration of the entire colon should first be carried out. If a satisfactory preoperative preparation of the colon has been obtained, there should be little confusion of polyps with fecal masses. They may also be confused with diverticula, but the fixation of the latter in one location and their appearance should make identification possible. Polyps can be palpated through the sigmoidal wall and moved back and forth within the lumen. Induration or fixation of the polyp makes the diagnosis of cancer imperative, necessitating resection. If tension is made on the polyp a dimpling can usually be demonstrated at the point of attachment of the pedicle, and frequently the pedicle itself can be felt. It is important to identify the site of the pedicle, since the incision in the sigmoid should be as close as possible to this position. A longitudinal incision is made through a longitudinal band after carefully walling off this portion of the sigmoid (Fig. 1). The incision should be long enough to examine the mucosa for a considerable distance, 3 cm. usually being sufficient. If there is cancerous infiltration of the base or pedicle, the incision in the sigmoid should be closed and resection carried out as for any cancer. If the pedicle is free, the polyp is excised with a generous portion of the mucosa at its base. The mucosal defect need not be sutured. The incision in the sigmoid is then closed with fine, interrupted, silk sutures in two layers (Fig. 2). In 4 of our cases this suture line was reinforced with the appendices epiploicae, and in 1 case the entire incision was made extraperitoneal by reflecting a flap of peritoneum from the lateral wall. If the

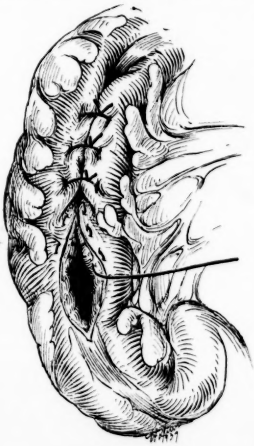

FIGURE 3.

The incision in the wall of the sigmoid is closed with two sets of sutures.

suture line is not satisfactory it should be made extraperitoneal.

Thorough histological study was made of the twelve polyps removed from these 10 patients by sigmoidotomy. One showed a malignant adenoma, and two an adenocarcinoma. Two others contained small foci of malignant change. In none was there any evidence of extension into the pedicle, and in no case could cancer be determined from the gross appearance. Basing our opinion on this experience, we believe that when on complete histological study no evidence of invasion of the pedicle or base is found, radical resection for polyps of this type is unnecessary. The occurrence

of early malignant changes in 5 of the 10 cases is striking evidence of the importance of the removal of all sigmoidal polyps as soon as they are discovered.

The postoperative convalescence was satisfactory in all cases, there being no complications and no mortality.

All polyps that could be visualized distal to the point from which the sigmoidal polyps were removed were destroyed by fulguration. One patient (Case 1) developed a carcinoma in the transverse colon just distal to the hepatic flexure four and a half years after sigmoidotomy. This was

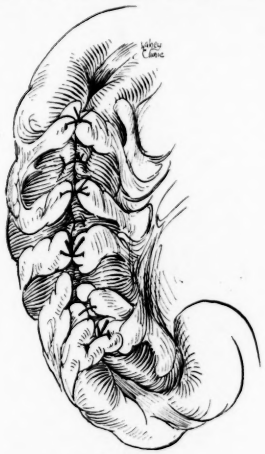

FIGURE 4.

The wound is reinforced by suturing appendices epiploicae across the line of the incision.

successfully resected by a modified Mikulicz type of resection. The other 9 patients remained well for the period of observation.

Patients who have had polyps in the large intestine should be kept under observation for an indefinite period. Sigmoidoscopic examinations and contrast enemas should be done each year for at least five years. Judging from our experience with carcinoma of the large intestine we believe that observation should be carried out for the same period postoperatively, since these patients are more apt to have subsequent cancer in other portions of the colon than are normal individuals. We have been mainly concerned in the past with observing such patients at regular intervals in order to discover the presence of distant metastases, particularly in the liver, whereas we should be equally concerned with the possible development of a new lesion in the bowel itself.

CASE REPORTS

CASE 1. E. W., a 48-year-old, married woman, was first admitted in April, 1929, complaining of symptoms typical of peptic ulcer and rectal bleeding of several years' duration. Complete gastrointestinal x-ray and laboratory studies without proctoscopic examination showed a duodenal ulcer. Dietary treatment for ulcer was carried out and the ulcer symptoms were relieved. Rectal bleeding, however, continued. In April, 1930, sigmoidoscopic examination showed two small mucosal polyps at the rectosigmoid juncture for which no treatment was advised. No hemorrhoids or other local anorectal disease was seen.

In December, 1932, because of continued rectal bleeding, contrast air films of the colon following a negative barium enema showed a large, discrete polyp in the upper sigmoid. On December 7 sigmoidotomy and left salpingo-oophorectomy were performed. At operation, palpation of the sigmoid revealed a freely movable, walnut-sized tumor, which was attached to a rather long pedicle. A longitudinal incision of the sigmoid was made and the polyp exposed. It was soft and friable and bled easily, and was excised, together with its pedicle. The bowel wall was closed longitudinally, and the suture line reinforced with appendices epiploicae. The left tube and ovary were removed because of the presence of a simple cyst. Pathological examination showed mucosal polyp. Postoperative convalescence was uneventful.

The patient next returned in June, 1937, because of increasing constipation. Barium enemas demonstrated a polypoid lesion in the transverse colon. On July 3 a Mikulicz type of resection of the right colon and right half of the transverse colon was performed. The pathological report showed adenocarcinoma and in addition two benign mucosal polyps. Postoperative convalescence was uneventful. The temporary colostomy was closed 2 months later.

In January, 1939, the patient was having some upper abdominal distress at times, but in general was in excellent condition.

Comment. This case is an excellent example of the development of cancer in a patient known to have polyposis of the colon.

CASE 2. L. P., a 68-year-old, married woman, was first examined October 10, 1933. The chief complaints were diarrhea and bloody stools of 9 months' duration. Sigmoidoscopic examination revealed a polyp in the lower sigmoid, 2 cm. in diameter. Barium enema x-ray and contrast air films of the colon were negative.

Sigmoidotomy was performed October 28. At operation a freely movable, walnut-sized tumor in the lower sigmoid was palpable. A longitudinal incision in the bowel was made. The tumor was found to be a discrete, freely movable polyp with a long mucosal pedicle. The tumor and pedicle were excised; the bowel wall was closed longitudinally and the abdominal wall closed in layers. Pathological examination showed a malignant adenoma.

The last report from this patient was September 1, 1936, at which time she was perfectly well in every way.

CASE 3. L. R., a 63-year-old man, was first examined January 27, 1938, for a chief complaint of rectal bleeding of 2 months' duration. Sigmoidoscopic examination demonstrated a discrete polypoid tumor in the lower sigmoid.

Operation was performed January 29. Palpation of the sigmoid revealed a discrete, freely movable tumor 11 cm. above the peritoneal reflection, with an unusually long pedicle. A longitudinal incision was made in the sigmoid and the polyp exposed. The tip was gangrenous and

was the obvious source of bleeding. The pedicle was 3 cm. in length. The polyp together with its pedicle was removed by the actual cautery. The bowel wall was closed in the longitudinal direction and the line of suture was reinforced with omentum. Pathological examination showed adenocarcinoma arising in a mucosal polyp. Because of the length of the pedicle of this tumor and its obviously benign character, it was felt that simple removal was adequate.

Sigmoidoscopic examination made March 15, 1939, was negative.

Case 4. M. S., a 37-year-old man, was first examined April 25, 1938, because of rectal bleeding of 2 years' duration. Sigmoidoscopic examination for a distance of 27 cm. was entirely negative. Barium enema and contrast air films taken after adequate preparation revealed a discrete polyp in the upper sigmoid, and also several areas in the transverse colon that were suggestive but not diagnostic of additional polyps. Re-examination the following day, after further preparation of the bowel with castor oil and enemas, corroborated the findings of the sigmoid polyp, but showed that the additional defects in the transverse colon had disappeared.

Operation was performed May 7. Palpation of the sigmoid revealed a polyp 2 cm. in diameter and freely movable, in the midsigmoid. It was delivered through a longitudinal incision and was attached to a pedicle 1.5 cm. in length, made up of normal-appearing mucosa. The polyp was clamped and removed and the bowel wall closed in a longitudinal direction. Pathological examination showed a benign mucosal polyp.

On February 21, 1939, a sigmoidoscopic examination, barium enema and contrast air films showed the entire colon to be negative.

Case 5. L. Z., a 53-year-old man, was first examined May 5, 1938, because of rectal bleeding of 1 year's duration. Sigmoidoscopic examination showed a large polypoid lesion with a fairly broad base, 27 cm. from the anal margin. Biopsy showed it to be a benign polyp.

Operation was performed May 9. Palpation of the sigmoid revealed two polypoid masses, one at the midsigmoid and one at the rectosigmoid juncture. Both tumors were freely movable. Both polyps were attached by benign pedicles, which were removed, together with the polyps. The sigmoid was closed in a longitudinal direction and reinforced with omentum. Pathological examination showed mucosal polyps with precancerous foci. Convalescence was uneventful.

Proctoscopic examination made July 6, 1939, revealed two small mucosal polyps, one 10 cm. and the other 17 cm. from the anal margin, which were fulgurated.

Comment. It is interesting to note that the polyps found at the time of the last examination had not been observed before, although a very careful examination had been made of this area 15 months previously.

Case 6. H. H., a 70-year-old man, was first examined August 29, 1938, because of intermittent bleeding and increasing constipation of 6 months' duration. Physical examination revealed slight lower-abdominal distention. A clinical diagnosis was made of an obstructing lesion in the sigmoid, based on the presence of blood coming down from the sigmoid as seen through the sigmoidoscope.

Operation was performed September 2. Palpation of the sigmoid revealed a freely movable tumor in the descending colon, 3 cm. in diameter, which was exposed by a longitudinal incision in the bowel. The tumor was attached to a rather short but apparently benign pedicle and was removed, together with its pedicle. The bowel wall was closed in a longitudinal direction. Pathological examination showed a mucosal polyp with a focus of cancer. Convalescence was uneventful.

The patient reported April 20, 1939, that he was in excellent condition, without intestinal symptoms.

Case 7. M. M., a 75-year-old man, was first examined July 7, 1938, primarily because of sciatica, but with a history of intermittent rectal bleeding of 15 years' duration. Abdominal exploration in 1934 had shown no pathologic change in the colon. Barium enema showed a questionable small filling defect at the rectosigmoid. Sigmoidoscopic examination revealed a polyp at this point.

Operation was performed September 16. Palpation of the sigmoid revealed a freely movable, soft tumor in the lower sigmoid, attached by a long thin pedicle. The tumor was delivered through a longitudinal incision and removed, together with its pedicle. The colon was closed in a longitudinal direction and the suture line extraperitonealized. Pathological examination showed a mucosal polyp. Convalescence was uneventful.

Proctoscopic and barium enema x-ray films of the colon taken February 9, 1939, were negative.

Case 8. L. M., a 60-year-old, married woman, was first examined October 21, 1938, because of rectal bleeding of 3 years' duration. Two barium enema x-ray studies of the colon were negative. Two sigmoidoscopic examinations for a distance of 25 cm. from the anal margin revealed blood in the lower sigmoid but no evidence of organic disease. A clinical diagnosis was made of benign or malignant polyp of the left colon.

Operation was performed October 27, 1938. Palpation of the sigmoid revealed a freely movable polyp, 2 cm. in diameter, attached to a long pedicle with a broad base. A longitudinal incision in the sigmoid revealed the polyp to be friable, soft and apparently benign. The pedicle was clamped at its base and the pedicle and tumor were excised. A longitudinal closure of the bowel wall was made, reinforced by the appendices epiploicae. Pathological examination showed a mucinous adenocarcinoma arising in a mucosal polyp. Histological study of the pedicle showed it to be entirely benign and a resection was not felt indicated. Convalescence was uneventful.

A sigmoidoscopic examination, barium enema and contrast air films taken August 25, 1939, were negative.

Case 9. P. P., a 49-year-old, married woman, was first examined March 2, 1939, because of rectal bleeding of 6 years' duration. Barium enema and contrast air films taken on two occasions were negative. Visualization of the lower sigmoid showed a polypoid tumor 4 cm. in diameter. A specimen taken at biopsy was reported as a benign mucosal polyp.

Operation was performed March 11. A soft, freely movable large polyp in the lower sigmoid was palpated. This was removed, together with its base, through a longitudinal incision. A smaller polyp lying 2 cm. proximal to this was also found at operation and removed in a similar manner through the same incision. The sigmoid was closed in a longitudinal direction. Pathological examination showed benign mucosal polyps. Convalescence was uneventful.

Sigmoidoscopic examination, barium enema and contrast air studies made July 26, 1939, were negative.

Case 10. I. F., a 35-year-old, married woman, was first examined April 17, 1939, because of a bloody diarrhea of 3 months' duration. A barium enema was negative. Sigmoidoscopic examination for a distance of 20 cm. from the anal margin revealed blood coming down from the bowel above this point, but no organic lesion was seen. A clinical diagnosis of polyps of the left colon was made.

Operation was performed May 1. Palpation of the sigmoid revealed a freely movable, soft polyp, 2 cm. in di-

ameter, in the midsigmoid region. The remainder of the pelvis revealed an extensive endometriosis. A supravaginal hysterectomy and left salpingo-oophorectomy were performed. The sigmoid polyp was then delivered through a longitudinal incision in the midsigmoid. It was attached to a long and benign mucosal pedicle. The polyp together with its pedicle was removed, and the bowel wall was closed in a longitudinal direction. Pathological examination showed endometriosis of the myometrium and a benign mucosal polyp. Convalescence was uneventful.

The patient reported by mail September 15, 1939, that she felt well and had had no intestinal symptoms.

Summary

Ten cases of sigmoidal polyps are reported. Five of the twelve polyps removed showed early malignant changes. The development of cancer from benign mucosal polyps in the colon and rectum is discussed.

Rectal bleeding of unexplained origin suggests the presence of a sigmoidal polyp. Bleeding was the presenting symptom in all our cases. The diagnosis is made by sigmoidoscopic examination, barium enema and contrast air studies.

Sigmoidal polyps should be removed by sigmoidotomy rather than by fulguration through the sigmoidoscope, because of the danger of hemorrhage, perforation and technical difficulties, and because of the difficulty in excluding cancer.

The technic of operation is described.

There was no operative mortality. In 1 case, cancer subsequently developed in the transverse colon. The rest of the patients remained well. Careful follow-up observations by sigmoidoscopic and x-ray studies are recommended.

605 Commonwealth Avenue.

Discussion

Dr. Howard M. Clute, Boston: One of the early examinations of the American Board of Surgery contained a question which read about as follows:

> A man of fifty noticed bleeding from the rectum, and on examination was found to have a rectal polyp. It was removed with a proctoscope, and frozen-section examination showed no cancer. In five or six days, however, when the microscopic studies were more complete, the pathologist noted malignant degeneration. What would you do?

When the board met, someone said: "One of the first things we have to settle is what is the right answer to Question 6." There was a difference of opinion among the members. Some said that they would observe this patient and put radium in the base of the lesion, or cauterize it and proctoscope him every three months. Others felt strongly that he should have immediate abdominoperineal resection of the rectum, since, if there was ever hope of curing cancer of the rectum, this was an ideal case.

I think all of us, when we see a polyp, are very anxious to limit ourselves to removal with a snare or cautery, because we hate to subject the patient to an abdominoperineal resection. However, if there is the slightest question of cancer he must have a radical resection. When one is actually confronted with a case of this sort, however, with such a tiny lesion, it may be difficult to make oneself perform this radical procedure.

I recently examined a patient who a year before had had a small polyp in his rectum, which was removed elsewhere and showed a trace of cancer. When I saw him he was in an inoperable state with cancer of the rectum. Remembering this, when another patient came to me recently with a tiny polyp in her rectum and a biopsy showed adenocarcinoma, I decided on an abdominoperineal resection. The rectum on removal showed a small cancer with no evidence of any metastases. She should be cured, I believe.

This is a most important subject, and Dr. Cattell has covered it quite completely. I think the point he would emphasize, and I should emphasize, is that if one removes a benign polyp one is in danger of having left behind a cancer. The follow-up studies that Dr. Cattell mentions as being done routinely are extremely essential in all these cases.

Dr. Arthur W. Allen, Boston: I wish to emphasize one of the statements which Dr. Cattell has made. One must not try to remove these sigmoidal polyps from below. If one uses a small loop for lesions above the pelvic floor, one is very likely to get into trouble, as the loop may easily burn through the bowel into the peritoneal cavity.

So far as the radical operation on these early cases of cancer of the bowel is concerned, I am absolutely in accord with Dr. Clute. If we are to cure cancer of the bowel these early lesions must be attacked radically. It is perfectly true that some patients with low-grade cancer in a polyp in the colon or rectum may not develop a recurrence in later life if a simple removal of the polyp is done. On the other hand, the polyps certainly recur on occasion, and I believe that our best opportunity to cure this disease is in the early cases.

I was interested in Dr. Cattell's statement concerning the ratio of large bowel lesions to rectal lesions. He asserts that they have approximately 3 cases of large-bowel carcinoma to 7 of carcinoma of the rectum. In a recent series of such cases that I have just begun to study at the Massachusetts General Hospital, we found 634 cases of carcinoma of the colon to 818 cases of carcinoma of the rectum. Thus you see we have a ratio of 6 to 8. In the *United States Public Health Service Reports* for 1936 there were recorded approximately 15,000 deaths from carcinoma of the colon, as against less than 8000 deaths from carcinoma of the rectum. I believe the answer to this variation is that at present more surgeons will operate on patients with carcinoma of the colon than will undertake the combined abdominoperineal operation for carcinoma of the rectum.

One other question is that of Devine's defunctioning operation prior to the removal of a lesion lower down in the colon. This procedure is becoming popular, and I should like to suggest that we try to make our defunctioning colostomies, if possible, in the left upper quadrant, using the splenic flexure, and leaving the right upper quadrant free of adhesions, since this area may be needed for surgery on the gall bladder or stomach later in life.

Dr. Cattell (closing): The published figures on the site of polyps of the large intestine vary greatly, probably because there is no uniformity in dividing the large intestine into the colonic and rectal segments. In our figures we include rectosigmoidal with rectal polyps, and this accounts for the high proportion reported in this area.

Dr. Allen and Dr. Clute have emphasized the importance of resection in cases of definite carcinoma even though it is early carcinoma. We are in complete agreement with this. However, if the cancer is confined to the periphery of the polyp and the pedicle is negative, complete excision of the polyp will be sufficient if these cases are followed carefully.

THE TREATMENT OF RHEUMATOID ARTHRITIS WITH SULFUR*

A Critical Evaluation

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BOSTON

PATIENTS with chronic diseases of unknown etiology are frequently subjected to various therapeutic procedures that are of questionable merit and are usually based on conjecture. Such supposedly curative or ameliorative measures are regularly administered to patients with chronic rheumatoid arthritis, often at considerable expense, not infrequently with resulting complications, occasionally even death, and generally without material benefit to the patient. This state of affairs is due in part to the fact that patients with chronic diseases often demand treatment. They are ever hopeful that each new form of therapy prescribed will be as specifically curative as the advertisements claim. There are, however, other causes for the continued prescribing of many useless antirheumatic remedies. The premature publication of poorly controlled studies acclaiming great therapeutic benefit and voluminous medical advertising constantly confront the busy practitioner of medicine. He possesses neither the time nor the facilities to investigate adequately the claims made. Except for the reports of the Council on Pharmacy and Chemistry of the American Medical Association, its "Queries and Minor Notes" columns and the all too infrequent publications concerning the repudiation of previously published premature claims, the busy physician has no way of determining the respective merits of many of the therapeutic procedures.

The parenteral administration of colloidal sulfur represents one of the more recently advocated forms of therapy for patients with rheumatoid arthritis, and has been acclaimed by many.[1–12] Favorable results have been reported in 30 to 100 per cent of the cases so treated.[1–13] Excerpts from some of these reports read as follows: "good results" — "a valuable agent in the treatment of certain types of arthritis" — "All the cases were objectively improved as judged by subsidence of swelling, relief of muscle spasm, decrease of thickening of joint capsule (when palpable), disappearance of any increased local temperature, decrease in tenderness, increase or return to normal range of motion and decrease in deformity." Woldenberg[8] observed improvement in all of 250 patients with rheumatoid arthritis so treated. He reports disappearance of pain and muscle spasm following the fifth or sixth injection, and disappearance of joint effusions after the third or fourth week. Such enthusiastic reports naturally attract the attention of physicians. In fact, many might think that they were guilty of neglect if they withheld such supposedly beneficial therapy from their patients with rheumatoid arthritis. The physician's suspicion of the newly heralded rheumatic remedy should be aroused when he learns that therapeutic benefits are observed in patients with either degenerative joint disease (hypertrophic arthritis or osteoarthritis) or rheumatoid arthritis. These two types of arthritis are distinct disease entities, in no way causally related. Therefore, it would be most surprising to learn that the same therapeutic agent cured both diseases. A few reports concerning sulfur therapy have been unfavorable.[14–18] In such publications, one reads such comments as "absolutely without effect," and "little or no improvement."

Recently, evidence has been presented in an attempt to place the treatment of rheumatoid arthritis with sulfur on a rational basis. This evidence has included an increased sulfur excretion,[9, 19, 20] a reduced cystine content of the fingernails,[1, 4–6, 8] a decreased sulfur content in the articular cartilage[21] and the need for a detoxifying agent.[12] Despite the presentation of these data, it will be shown that it is still impossible to prove the existence of a primary disturbance in sulfur metabolism in patients suffering with rheumatoid arthritis.

A negative sulfur balance was observed in 2 patients with rheumatoid arthritis, carefully studied by Goldthwait, Painter and Osgood.[19] No control subjects were similarly studied. Cawadias[9] reports an increased urinary excretion of sulfate, phenylsulfates and incompletely oxidized sulfur in all cases of "subacute rheumatism" studied. Race,[20] however, notes an increased excretion of unoxidized sulfur in only 20 of 42 cases of "rheumatoid conditions," all of which showed positive sulfur balances. This author stresses the fact that the above finding was difficult to interpret because

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of failure to study comparable controls. Subsequently, Senturia[22] was unable to demonstrate either an abnormal partition or the excretion of sulfur in the urine of arthritic patients.

The finding of a reduced cystine content in the fingernails has been cited repeatedly as signifying the existence of a sulfur deficiency.[1, 4-6, 8, 23] Many of the earlier reports[13] concerning this abnormality are of questionable significance because of the method used in making such determinations. The fact that patients suffering from other diseases — carcinomatosis, prolonged fevers and so forth — exhibit lowered cystine content of the fingernails should cause one to be extremely skeptical of the value of such determinations in judging either the indication for, or the benefits to be derived from, sulfur therapy. Furthermore, some workers[13, 24] have stated that a large percentage of patients with rheumatoid arthritis do not show this abnormality. In addition, it has been claimed that rheumatoid arthritic patients may improve with sulfur therapy, even though the fingernail cystine content was normal, or failed to return to normal when such treatment was administered.[13] Race[25] was the first to suggest that this phenomenon did not represent a primary disturbance of sulfur metabolism. He called attention to the fact that the cystine content of globulin was lower than that of albumin. This being the case, he thought it extremely probable that the reduced cystine content of the fingernails was a reflection of the altered plasma proteins, namely a reduced albumin-globulin ratio, so frequently observed in patients with rheumatoid arthritis.

The evidence suggesting that the sulfur content of articular cartilage is reduced in patients with rheumatoid arthritis is meager and not well established.[21] Despite this fact, one author[8] has suggested, without further proof, that at least some, if not all, forms of arthritis are made possible because of an existing sulfur deficiency. This assumption is most untenable, because the available data must be interpreted as meaning that a sulfur deficiency does not exist.

Forbes and Neale,[12] having demonstrated that the intra-articular injection of indole results in a chronic arthritis, and having observed the elimination of indole in the urine of 34 of 35 patients with arthritis (rheumatoid, hypertrophic and mixed arthritis), advocate the administration of sulfur in various types of arthritis. These authors failed to stress the fact that the intra-articular injection of many innocuous agents will produce a chronic arthritis. Their failure to separate the various types of arthritis indicates that the authors are of the opinion that sulfur deficiency, and in consequence failure to detoxicate indole, are of primary importance in the production of various types of arthritis. The data thus far presented do not warrant such conclusions.

In view of the above-mentioned data, and of the carefully controlled metabolic studies of Freyberg, Block and Fromer, which have recently been presented in abstract form,[26] it must be concluded that the administration of sulfur to patients with rheumatoid arthritis is not based on scientific fact. It has been our purpose to evaluate, as critically as possible, results of colloidal sulfur therapy in a small, carefully studied and well-controlled group of patients with unquestioned rheumatoid arthritis.

Methods of Study

We[27] have previously stated that in a chronic disease of unknown etiology, such as rheumatoid arthritis, characterized by spontaneous remissions, it is extremely difficult to evaluate the results of therapy with any degree of certainty unless the studies are rigidly controlled. Because of the marked variations in the course of the disease from case to case, each patient must be made to serve as his own control. If studies pertaining to the evaluation of therapeutic procedures are not conducted in this manner, one is very apt to conclude that the improvement observed is the result of therapy, whereas it may actually represent a natural variation in the course of the disease. Such a controlled study can be made only by choosing patients whose clinical course and variations in sedimentation rate have been known for months or years prior to the institution of a new form of therapy. An adequate follow-up period is most essential so that one can decide as to the permanency of any improvement noted during the period of therapy. In addition to the above precautions, it is extremely important that the patients be kept on the same basic regime before, during and after the administration of the therapy being evaluated. Every available means should be employed in evaluating clinical improvement. We record separately the subjective, objective and laboratory evidence of improvement, the final result being based on all three. This method of recording enables one to establish more accurately what, if any, psychic effect must be taken into account in the final summation. In all fairness to the type of therapy being studied, only patients whose disease state is active and still reversible should be selected. One must also realize that the early and atypical cases are more apt to show remissions than are the more typical cases which have been more or less stationary for a long time. If the administration of a given form of treatment should result regularly in improvement in this latter group, one might have reason

Table 1. Data on All Cases

Case*	Sex and Age	Characterization of Arthritis: Duration of Disease	Extent of Involvement	Activity of Disease	Total Severity	Time Observed before Therapy	Course before Therapy	Total Amount of Sulfur Given	Method of Administration	Results at End of Therapy: Subjective	Results at End of Therapy: Objective	End Results and Comments
		yr.						mg.				
13	F 45	5	Moderate	Moderate	Moderate	2 yr.	Many good and bad periods, influenced by emotional upsets	320	Intravenous	Less fatigue and pain	No change	Showed slight subjective improvement but no objective change. Had an exacerbation 3 months later.
								320†	Intravenous	Less fatigue and pain	No change	Patient remarked that results were not so beneficial with second course.
52	F 32	7	Moderate	Moderate	Moderate	15 mo.	Stationary	320	Intravenous	Less pain and stiffness, greater strength	No change	Subjectively improved. No objective change. Three days after last injection had exacerbation, involving new joints as well as old.
116	F 39	19	Moderate	Mild	Moderate	1 yr.	Stationary, pain most marked symptom	310	Intravenous	No change	No change	No change
181	F 28	6	Mild	Mild	Mild	5 yr.	Spontaneous remissions and exacerbations, stationary for past 9 months	320	Intravenous	No change	No change	No change. Often had to go to bed because of arthritis both during and after course of treatment.
188	M 46	7	Mild	Moderate	Moderate	5 yr.	Stationary	320	Intravenous	"Joints move easier"	No change	No objective change. Patient believed that he was "helped a little."
203§	F 31	13	Extensive	Moderate	Moderate	2 yr.	Slowly progressive	160	Intravenous	No change	No change	No change. Stopped treatment of own accord due to discouraging results.
213	F 31	2½	Mild	Marked	Moderate	4 mo.	Steadily progressive	320	Intravenous	No change	No change	No change
225	F 53	5	Mild	Moderate	Moderate	3½ yr.	Stationary	360	Intramuscular	Stronger, better appetite, less pain	No change	Slight subjective improvement. One new joint became involved while under treatment.
229	F 49	7	Mild	Moderate	Moderate	4 yr.	Stationary	370	Intravenous	Felt stronger and had less pain, worse during final week of treatment	No change	No change. Large psychic element. Felt better immediately after each injection, but improvement lasted only 12 to 48 hours. Exacerbation in final week of treatment.
279	F 57	7	Extensive	Moderate	Moderate	1 yr.	Stationary	320	Intramuscular	No change	No change	No change
M. A.	F 43	3	Moderate	Moderate	Moderate	2 yr.	Slowly progressive	350	Intravenous	Better after second injection, much stronger, less pain	No change	No change
B. Z.	F 45	9	Mild	Mild	Mild	2 yr.	Stationary	350	Intravenous	Slight improvement, mainly in general strength	No change	Slight subjective improvement. Psoriasis disappeared during therapy, but returned shortly thereafter. Similar remissions before and since, without therapy.
								1200†	Intravenous	No change	No change	Disappearance of psoriasis again noted. Reappearance again after therapy. Joints not affected.
353¶	M 55	20	Extensive	Moderate	Moderate	4 mo.	Progressive	1080	Intravenous	No change	No change	No change
G. L.‡	M 57	9	Moderate	Moderate	Moderate	1 yr.	Stationary	2980	Intravenous	No change	No change	No change

*Case numbers refer to patients with rheumatoid arthritis who have been studied in detail in the clinic and will be used in all subsequent publications. Cases listed by initials are private cases of one of us (W. B.).
†Second course of treatment.
§This patient had been given 80 mg. previous to this course.
¶Includes complete remissions. Present attack of 2 yr. duration.
‡Total of 1480 mg. given, followed by rest period of 1 mo., then total of 1500 mg. administered.

to suspect that one was dealing with a specific form of therapy.

In the present series of patients, all but 2 had been observed for periods varying from one to five years before sulfur therapy was instituted. The two exceptions (Cases 213 and 353) had been on an established basic regime for months prior to hospitalization, without obtaining any appreciable effect. The same basic regime of a high-vitamin, high-caloric diet, added vitamins in the form of cod-liver oil and yeast, daily physiotherapy and constant rations of acetylsalicylic acid, allowed during the pretreatment period, was continued during the sulfur therapy and post-treatment periods.

Fourteen patients — 12 ambulatory and 2 hospitalized — were studied. Two of these (Cases 13 and B. Z.) received two series of injections. Colloidal sulfur in the form of Sulisocol* was given intravenously to 12 patients (fourteen courses) and intramuscularly to 2. Ten patients received a total of 310 to 370 mg. of colloidal sulfur over a period of six to eight weeks. One patient became discouraged and discontinued treatment after 160 mg. had been given. In order to establish that larger doses (1000 mg. or more) were no more efficacious than the previously mentioned smaller ones, 3 patients were given 1080, 1200 and 2980 mg. respectively. Twenty milligrams was administered as an initial dose, except for 2 of the patients receiving the larger doses, who received 30 mg. initially. Subsequent injections of 30 mg. each were given to all patients except those receiving the larger doses. In the latter cases 50 mg. was given as a second dose and 100 mg. subsequently.

Results

The results of sulfur therapy, as well as a brief clinical résumé of each patient's history, are contained in Table 1. In no case were any toxic symptoms observed. In an occasional case the solution being injected escaped into the subcutaneous tissue, with resultant burning and redness, which subsided quickly with the application of hot dressings. Sloughing of the skin was never observed. In 2 cases a brownish pigment appeared over the dorsum and the palmar surface of the hands. This may have represented a manifestation of the disease.

Subjective improvement, consisting of increased strength and less joint pain, was noted after eight (50 per cent) of the sixteen courses of treatment in the 14 patients. No patient, however, improved objectively. Of the patients subjectively improved, 1 (Case 52) experienced an exacerbation as the course of therapy was being completed. In 1 case (Case 229) the effect was probably largely psychic, in that improvement was always noted within thirty minutes after receiving the injection and lasted only twelve to forty-eight hours. During the last week of therapy, this patient suffered from a severe exacerbation of her arthritis, involving new as well as previously affected joints. In only 1 case (Case M. A.) did the subjective improvement last longer than three months. Two patients who improved subjectively following the first series of injections soon experienced exacerbations. In one of these (Case B. Z.) there was no improvement; in the other (Case 13) the patient improved only slightly with an additional course of therapy.

It has long been our opinion that the corrected sedimentation rate[28] is the most reliable single test for determining the activity of rheumatoid arthritis.[29] When performed at regular intervals, it can often be relied on to measure more accurately the activity of the disease than does the physical examination. As can be seen from Table 2, this test

TABLE 2. *Sedimentation Rates Observed in Patients Receiving Colloidal Sulfur.*

Case	Control Period*			Immediately after Treatment	Follow-Up Rates			
	High	Low	Last		1 mo.	2 mo.	3 mo.	6 mo.
	mm.	*mm.*	*mm.*	*mm.*	*mm.*	*mm.*	*mm.*	*mm.*
13 (first course)	1.27	.85	1.02	0.94	0.92	—	0.86	1.01
13 (second course)	0.94	0.86	0.86	1.06	—	—	0.89	0.96
52	1.09	0.70	0.86	0.82	0.89	1.27	—	0.96
116	0.83	0.60	0.69	0.55	—	—	0.42	0.69
181	1.91	1.50	1.91	1.66	1.52	1.82	—	1.95
188	1.48	1.14	1.48	1.04	—	—	—	1.07
213	1.63	1.47	1.63	1.57	1.67	1.66	1.45	1.16
225	1.13	0.90	1.13	0.92	1.16	—	—	0.94
229	0.70	0.68	0.70	1.12	0.84	0.71	0.59	0.76
353	0.72	0.71	0.72	0.94	0.92	0.83	0.73	0.74
M. A.	1.52	0.95	1.52	0.97	—	—	1.02	0.79

*Sedimentation rates for the control periods represent the variations for the preceding six months, except for Cases 188 and 213, in which the rates cover only two months, and Cases 225 and 353, one month. The rates are expressed in millimeters per minute, the upper limit of normal being 0.40.

was performed at regular intervals before, during and after therapy in 10 cases receiving eleven courses. We used the same criteria for judging improvement, as measured by the sedimentation rate, previously described.[27] A drop of 0.15 mm. per second was considered significant when the initial rate varied from 0.5 to 1.0 mm. per minute. A drop of 0.2 mm. per second was judged significant if the initial rate varied from 1.0 to 1.5 mm. per minute, whereas a drop of 0.3 mm. per second was considered significant if the initial rate exceeded 1.5 mm. per minute.

Employing these criteria, only 3 patients (Cases 188, 225 and M. A.), showed significant drops in the sedimentation rate. In 2 of these (Cases 225 and M. A.) the decreased rate accompanied subjective improvement. In the third, the rate re-

*Supplied through the courtesy of Drug Products Company, Incorporated, Long Island, New York.

turned to the pretreatment level one month after therapy was completed. The lowered rates in Cases 225 and M. A. were maintained for twelve and eighteen months, respectively, despite the fact that objective improvement was not noted. In no case did the sedimentation rate return to normal.

Discussion

From the above results it seems reasonable to conclude that colloidal sulfur, even when administered in large doses, does not alter the course of rheumatoid arthritis. While the number of cases so treated is small, the uniformity of the results renders them significant.

It will be of interest to those workers who have contended that a primary sulfur disturbance exists in patients with rheumatoid arthritis to learn of the results obtained by Freyberg, Block and Fromer[26] in carefully executed metabolic experiments carried out on patients with rheumatoid arthritis and on control subjects. Their results show that there exists no fundamental difference in the amount of sulfur excreted or the manner in which it is excreted by arthritics and by control subjects.

> The injection of colloidal sulfur affected the metabolism and excretion of sulfur in patients with rheumatoid arthritis in the same way as it did in normal individuals: When injected intravenously, the sulfur excretion in all but one patient increased by amounts considerably greater than the amount of sulfur injected. Thus, the injection of colloidal sulfur actually created a deficiency of sulfur. Obviously, then, this method of treatment could not be expected to prevent or diminish a deficiency of sulfur in the body if such deficiency existed. Injected sulfur was eliminated chiefly as inorganic sulfate; there was no important increase in the conjugation of sulfur, and hence no benefit could result by conjugation of toxic substances. Sulfur given orally in colloidal form and as sodium thiosulfate effected the same changes in the arthritics as in the normal individuals; there was no increase in conjugation of sulfur. Thymol was readily conjugated with sulfuric acid by the arthritic patients and the controls similarly, thus indicating no impairment of this detoxifying mechanism and no need for sulfur medication on this account. Our analysis of fingernails showed no changes in the cystine content after sulfur medication.

These same authors conclude:

> No evidence of sulfur deficiency or abnormality in sulfur metabolism was found to exist in patients with rheumatoid arthritis. The data of this study reveal no biochemical or metabolic indication of need for, or benefit from, sulfur medication in the treatment of rheumatoid arthritis.

From the above, it appears that the physician who fails to administer colloidal sulfur to a patient with rheumatoid arthritis is not guilty of neglect. Colloidal sulfur therapy represents another antirheumatic remedy which can be dispensed with in the treatment of rheumatoid arthritis, with considerable saving of expense to the patient. Milder toxic reactions have been observed. One must further realize that the administration of any therapy intravenously is not without danger.

The data contained herein are in agreement with the action taken by the Council on Pharmacy and Chemistry of the American Medical Association,[17] which has been unwilling to include in its list of approved new and non-official remedies any of the colloidal sulfur preparations now on the market. The Council stated that such a product was not acceptable "because of the lack of evidence of its therapeutic value."

Summary

Evidence is cited which proves that a primary disturbance of sulfur metabolism does not exist in patients with rheumatoid arthritis.

Data are presented showing that the administration of colloidal sulfur in small or large doses does not alter the course of rheumatoid arthritis, as measured by objective or laboratory evidence of improvement in well-controlled cases.

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REPORT ON MEDICAL PROGRESS

SURGERY OF THE SYMPATHETIC NERVOUS SYSTEM, WITH PARTICULAR REFERENCE TO VASCULAR DISEASE

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BOSTON

INTERRUPTION of sympathetic pathways in man is extremely helpful in the treatment of many disorders, particularly those involving the vascular system. This field is a very open one, especially as far as etiologic factors are concerned. In many disorders amenable to treatment by sympathectomy, the question may be raised as to whether they are due to disease of the arteries themselves, or whether increased sympathetic outflow actually exists, and in turn results in diminished blood flow to the part, and later in pathologic changes in the arteries. In other words, is one dealing with primary vascular disease or with a lesion of neurogenic origin? In this connection one might refer to the long-standing disagreement concerning the etiology of Raynaud's disease. Much of the evidence available on this matter may be utilized in support of either viewpoint. The difficulty is that no conclusive data exist, because most methods of study involve a measurement of the sum total effect of vascular disease and sympathetic influence. The matter can be settled only by separating the two, and by demonstrating conclusively that increased sympathetic motor impulses either are or are not present. There is a tendency, by those who favor the vascular theory of origin, to conclude or imply that sympathectomy is therefore not indicated as a form of treatment. This often applies to their attitude toward the indications for sympathectomy for vascular disease in general. They appear to hold that because a disease may not be neurogenic in origin, interruption of sympathetic pathways is illogical. In the matter under discussion, Sir Thomas Lewis,[1-3] the most steadfast and devout exponent of the "local fault" theory, believes nevertheless that sympathectomy, particularly the preganglionic type, is the treatment of choice for this disorder. All who are familiar with the benefit which follows a properly executed sympathectomy will agree.

The effect of extensive sympathectomy in animals is always a source of interest, and yields information that may be of help in the understanding of disease in man. One must be cautious, however, in the interest of the patient, in concluding that the effect of sympathectomy on normal animals will be the same in human subjects with disease. Conversely, one must not be too hasty in assuming that the effect of sympathectomy in animals with induced disease, not identical with that found in man, will necessarily be duplicated in the latter. Particularly dangerous is a tendency by some to work out anatomic pathways in man by inferences drawn from animal investigation.

One always turns with interest to the reports by Cannon and his co-workers of their experiences with ablation of sympathetic influence in animals. Of particular interest is the striking difference in the effect of total sympathectomy in the cat and in the dog. This matter has recently been discussed in a series of articles[4-6] showing that a cat devoid of its sympathetic nervous system is extremely sensitive to heat and cold, to anoxemia, to blood loss and particularly to muscular exercise. A dog, on the other hand, responds in an almost normal manner under these same conditions. Both cats and dogs are alike in being extremely sensitive to insulin after sympathectomy.

These findings serve to emphasize the dangers of drawing conclusions by inference, even among animals of different species. It would appear even more questionable to conclude what the effect of sympathectomy would be in man from experimental work carried out in animals. Most authorities agree that the effect of elimination of

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sympathetic influence in man had best be determined by a careful study of the end results of various procedures as applied to man, rather than by inference from animal experimentation.

The technic of sympathectomy, as related to the extremities, in man is now well standardized. As a result of many years of trial and error, operations have been devised to fulfill certain necessary qualifications. These have been set up and determined by a close comparison of the end results of different procedures. Sympathectomy is followed by the best clinical results when the area in question is thoroughly denervated, by preganglionic rather than postganglionic section. Care must be taken to guard against regeneration of interrupted pathways, in order that the late results may not suffer by comparison with the satisfactory immediate effects. Reference is made to the technic that best fulfills these qualifications.[7] While to perform these operations requires specialized knowledge and training, they carry a minimal risk to the patient, short periods of disability and no serious untoward effects. Preoperative studies make it possible to predict the result to be expected with a high degree of accuracy. Clinical experience is also important in this regard.

Circulatory Disorders of the Extremities

Particularly useful is sympathetic denervation of the extremities for circulatory disorders. These may be chiefly vasospastic in nature (Raynaud's disease), with undemonstrable to moderate organic changes in the arterioles. The earlier sympathectomy is performed, the better the result. In such cases, spasm in response to cold, pain and emotion is virtually eliminated, blood flow is greatly increased and the symptomatic relief is impressive. When local tissue damage already exists, the operation results in increased tolerance to cold and shorter, less intense periods of vasoconstriction. Similar relief follows sympathectomy for vascular spasm secondary to underlying disease such as anterior poliomyelitis, thromboangiitis obliterans and certain of the causalgias. The cold, blue, cyanotic extremity with chronic or persistent ulceration that sometimes follows infantile paralysis may be rendered warm, dry and pink by sympathectomy. In young children, where a discrepancy in the rate of growth of the two extremities exists, sympathectomy may be utilized to decrease the eventual difference in the length of the two limbs. As an adjunct to the treatment of thromboangiitis obliterans, the value of sympathectomy should not be underestimated. It has been a highly significant factor in the reduction of the incidence of major amputations in this disease, from approximately 75 per cent fifteen years ago to 6 per cent at the present time.

Under the diagnosis of causalgia, certain patients are grouped who suffer from painful lesions of the digits or extremities resulting from old injuries or infections. The extremity is cold, cyanotic and extremely sensitive. A tender, scarred amputation stump may be present. If temporary relief of pain with improved circulation follows paravertebral novocain block, sympathectomy has been found to be extremely valuable in the rehabilitation of such patients. If the local fault is great, reamputation may also be necessary. The latter is not successful as a rule, unless the circulation is first restored by sympathetic denervation.

The importance of reflex vascular spasm as associated with sudden occlusion of peripheral arteries should be emphasized. This applies particularly to embolic occlusion and also to sudden thrombosis. The entire peripheral vascular tree constricts reflexly under these circumstances. This hinders the development of collateral circulation, and is a vital factor in the high incidence of major amputations after occlusion of large arteries such as the femoral. A similar mechanism is present following injuries of main arteries by laceration and gunshot wounds. In the upper extremity, occlusion of the brachial artery may be related to cervical ribs, anomalous first ribs and the scalenus anticus syndrome. More recently, the importance of reflex vascular spasm and its relation to acute thrombophlebitis of femoral and iliac veins have been stressed by Ochsner and DeBakey.[8] In all the above conditions this reflex may be abolished by repeated paravertebral novocain block, by paravertebral alcohol injection or by sympathectomy when feasible and necessary.

The gratifying relief afforded by sympathectomy to those who suffer from extreme and uncontrolled perspiration of the extremities (hyperhidrosis) has been re-emphasized by White.[9] In this disease, excessive activity of the sweat glands is presumably neurogenic in origin. Increased vasoconstriction does not necessarily accompany the increased sudomotor activity. Because sympathectomy is followed by complete abolition of sudomotor reflexes, the clinical result is impressive. The hands or feet are rendered dry and warm.

Hypertension

This very important manifestation of disease is one of the most discussed problems in medicine today. It is well that this is the case, for there are few matters of greater consequence to man. The cause of high blood pressure in a certain group of patients who are classified as suffering from

essential hypertension is still unknown. That high blood pressure may result from intracranial lesions, from arteriosclerosis, from tumors of endocrine glands, more particularly the basophilic adenoma of the pituitary and the medullary adrenal neoplasms, and from renal disease, polycystic kidneys, embryomas and pyelonephritis, as well as from other causes, is well known.

It is obviously highly desirable that a patient with hypertension be studied in a detailed manner and that all possible known causes of hypertension be excluded. The brilliant researches of Goldblatt, Kahn and Hanzel[10] have served to focus attention on the kidney, and as a result a certain group of patients can be segregated who will benefit by the correction of renal disease. As yet there are few such examples on record, but others will appear in time. It would seem, however, that there will still remain a large group of cases in which no cause for hypertension can be found.

In a study of 212 patients who presented themselves for treatment because of hypertension, Palmer[11] found evidence of marked renal disease (asymptomatic) in 47 as a result of routine intravenous pyelograms. In 33 cases the disease was unilateral. The affected kidney was removed in 9 of these cases. The blood pressure was favorably affected in 1, and possibly reduced in 2. Palmer expresses the opinion, which is also held by others, that nephrectomy in cases with unilateral renal disease in order to be effective in lowering blood pressure must be done in young patients in whom the renal disease is of very recent origin.

In essential hypertension no renal disease can be demonstrated in the early stages. It is conceivable, however, that some abnormality of the renal circulation, undemonstrable by modern methods of study, may be present. The arterioles may be constricted by some intrinsic or vasomotor mechanism. This might result in elevation of blood pressure, and in turn in generalized arteriolar constriction as a protective mechanism to prevent damage to tissues. Many authorities hold the viewpoint that high blood pressure is caused by a generalized constriction of arterioles due to vascular disease. Under these circumstances, high blood pressure is the compensatory mechanism for assuring adequate tissue nutrition by forcing sufficient blood through the constricted arterioles. All agree that in this condition the peripheral resistance to blood flow is increased.

Whatever may be the true explanation, the purpose of sympathectomy is to eliminate vasoconstriction where it is most likely to affect the general blood-pressure levels. Vasoconstriction in certain portions of the vascular bed has a much greater effect on the general blood pressure level than it has in others. For instance, peripheral vasoconstriction has little effect on blood-pressure levels as contrasted with splanchnic constriction. What portion of the splanchnic bed is most important is a question, but one may suspect the renal vascular bed to be particularly so.

One knows from experience with peripheral vessels that vascular relaxation with increased blood flow to the part may occur and persist after sympathectomy, whether the vessel be normal or constricted. The latter may be due to intrinsic disease or increased vasomotor activity, or to a combination of both. In experimental hypertension in animals induced by renal ischemia, a chemical factor, renin, elaborated by the kidney appears to cause the hypertension. That this is also true in man is not as yet known. In animals, this chemical factor disappears if the constricting band is removed before irreparable damage has been done to the kidney. How often a corresponding renal ischemia is the cause of continued arterial hypertension in man is unknown. Nor is it certain whether the original vascular constriction is functional and reversible or organic and irreversible, or whether both factors play a part.

The purpose of sympathectomy is to denervate the blood vessels of the splanchnic bed. Included in this are the kidneys and the adrenal glands. It is essential that the latter be denervated because all sympathectomized vessels will constrict in response to increased secretion of adrenaline into the blood stream. In order that the relaxation be as complete as possible, it is therefore necessary to abolish reflex secretion of adrenaline. Furthermore, the action of adrenaline and similar hormones on denervated arterioles is greater after postganglionic section. It appears wise, therefore, to perform a preganglionic type of denervation so far as possible.

Several methods of splanchnic denervation are in use today. A detailed report of the effect of supradiaphragmatic splanchnic resection (Peet) on hypertensive patients has been made by Braden and Kahn.[12] In a careful review of 264 cases followed for six months to five years, they report an operative mortality of 3 per cent and find that 23 per cent of patients have died since operation. In the remaining cases they find significant reduction of blood pressure in 43 per cent. Of those who were incapacitated before operation, 84 per cent were able to return to their former activities. Symptomatic relief was obtained in 87 per cent. Changes in eyegrounds, as well as in cardiac and renal function, are discussed in some detail.

Adson,[13] in discussing his experience with subdiaphragmatic splanchnic resection, stresses the importance of the selection of cases. He believes

that the response to sedation and to stimulation by the cold pressor test are valuable guides. In an unselected group of 156 cases, there was 1 operative death. Normal blood pressures resulted in 20 per cent of cases, and significant lowering in 35 per cent. Symptomatic relief in these two groups ranged between 85 and 95 per cent. No effect on blood pressure was noted in 20 per cent, and temporary lowering (six months to two and a half years) was noted in 25 per cent. Adson believes that better results will be obtained in carefully selected cases.

Davis and Barker[14] found that 4 patients who were resistant to sulfocyanate therapy before operation responded favorably to this drug after bilateral supradiaphragmatic splanchnic resection had failed to influence the blood-pressure levels. In dogs made hypertensive by renal ischemia (Goldblatt), the blood pressure fell in every case in response to sulfocyanate. This was accompanied by a fall in hematocrit, total protein, urea nitrogen and cholesterol similar to that seen in man. These authors are as yet unable to state whether the response to sulfocyanate in Goldblatt dogs which have also had bilateral supradiaphragmatic splanchnic resection is more marked than in unsympathectomized dogs. They have not found a Goldblatt dog that was resistant to sulfocyanate.

My own experience with supradiaphragmatic and infradiaphragmatic resection is similar to that reported by Peet and Adson. I have noted, however, that in favorable cases in the same stage of the disease the effect of operation on blood pressure is not always uniform. In fact, there may occasionally be no demonstrable change in blood pressure after operation in patients who do not have sufficient organic vascular disease to account for such a result. It appeared reasonable to suspect that this might be due to incomplete splanchnic denervation because of anatomic variations. For several years I have been varying my operative technic so as to find the minimal procedure that would give good evidence of having resulted in adequate splanchnic denervation. The production of a postural fall in blood pressure has been used as an index of the completeness of interruption of sympathetic pathways. It appears that in order to produce this change in every case, the entire great splanchnic nerve must be removed with its branches to the aorta above the diaphragm, and the sympathetic trunk must be removed from above the ninth dorsal to below the first lumbar segment. This requires exposure both above and below the diaphragm, which is obtained by resecting the twelfth rib. It enables one to inspect the kidneys and adrenal glands as well. The early effect of this procedure in a small group of cases operated on during the past year has recently been reported.[15]

It would appear that adequate splanchnic denervation in selected cases will result in material and persistent lowering of the blood pressure levels. The true value of sympathectomy as a form of treatment of essential hypertension in man will not be known for several years.

Bladder Pain

The relative importance of afferent sympathetic, somatic and parasympathetic pathways from the bladder has been discussed in some detail by Schroeder[16] and Nesbit and McLellan.[17] Both find that resection of the presacral nerve may be very helpful in alleviating the discomfort associated with tuberculosis and interstitial cystitis. The former believes that exeresis of the lateral sympathetic chains as well gives even greater relief, but that intraspinal alcohol injection also may occasionally be necessary. Nesbit and McLellan, on the other hand, find presacral neurectomy alone as effective as if combined with removal of the lateral sacral sympathetic chains. They further believe that few if any pain pathways are interrupted, but that the relief of pain is due to relaxation of the internal sphincter, with elimination of the intense spasm of this muscle which is associated with micturition. In other words, they believe that relief is due to interruption of motor rather than sensory pathways.

Angina Pectoris

The problem of intractable angina and what can be done to relieve it is still under discussion. There are three approaches to be considered: interruption of sympathetic sensory and motor nerves to the heart, lowering of the metabolic needs by total thyroidectomy and increase of the collateral circulation of the heart. The cardiac nerve supply may be interrupted either by actual division or by paravertebral alcohol injection of the nerves concerned.[18] While the former would give a higher percentage of excellent results in those who survived, one must be willing to accept an operative mortality of at least 15 per cent and perhaps higher. Paravertebral alcohol injection results in relief in about 80 per cent of cases, with a mortality of between 1 and 2 per cent. It has therefore taken the place of more risky operative intervention. Raney[19] has recently advocated division of the communicating rami of the second to the fifth dorsal segments, inclusive. He reports a small series of cases with excellent results and without mortality. Exactly the same pathways are interrupted by alcohol injection, and the lat-

ter will always carry a much lower mortality. The fact that Raney attributes the benefit to section of motor rather than sensory pathways is more of academic than of practical significance. Moreover, ramisectomy has never been found to stand the test of time, because of regeneration of interrupted pathways. Alcohol injection lasts as a rule for several years, and can be repeated. Reoperation is not practical. Besides relief of pain, alcohol injection may also result in increased cardiac reserve.

Total thyroidectomy[20] is to be considered in a small group of carefully selected cases. It does not have the universal applicability of alcohol injection. The mortality, however, is low (about 4 per cent). The procedure has untoward side effects, myxedema in particular. It does not increase blood flow to the heart, but decreases the demands on the cardiac circulation.

Attempts to increase the collateral circulation of the heart in order to relieve angina may be viewed with interest. By this method, it would appear that if successful one has a chance of prolonging life expectancy. However, the operations (Beck,[21] Davies, Mansell and O'Shaughnessy[22]) are of great magnitude, and carry a high mortality. Those who survive appear to obtain decided benefit. Sufficient time to evaluate this procedure has not elapsed.

At present, it appears that paravertebral alcohol injection is the treatment of choice, and most surgeons would select this method for themselves.

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CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL

ANTEMORTEM AND POSTMORTEM RECORDS AS USED IN WEEKLY CLINICOPATHOLOGICAL EXERCISES

FOUNDED BY RICHARD C. CABOT

TRACY B. MALLORY, M.D., *Editor*

CASE 26131

PRESENTATION OF CASE

A thirty-four-year-old man was admitted to the hospital complaining of hematuria.

The patient was apparently well until the morning of the second day before admission when he suddenly developed a crampy, moderately severe, non-radiating pain in the right lower quadrant of the abdomen. The pain persisted for five minutes, passed away and recurred in the afternoon, although at this time it was less severe. It disappeared after a heavy evening meal, and because of this, the patient thought that the discomfort was a "hunger pain." He was awakened from a sound sleep by another episode of the right lower-quadrant pain, but it lasted only a few minutes, vanishing after drinking water. He returned to sleep, awoke at his usual hour, and passed urine intimately mixed with bright-red blood. A second specimen passed a few hours later was also bloody. He then came to the hospital and was admitted. The family, marital and past histories were noncontributory.

Physical examination revealed a well-developed and well-nourished, moderately pale man in no apparent discomfort. There was "moderate tenderness along the course of the right ureter and in the right lower quadrant, with voluntary spasm." The remainder of the examination was negative.

The temperature, pulse, respirations and blood pressure were normal.

Examination of the blood showed a red-cell count of 5,110,000 with 90 per cent hemoglobin. The urine was bloody and acid in reaction, with a specific gravity of 1.014 and a ++++ albumin test; the smear showed no organisms but many red blood cells.

At cystoscopy, the instrument passed easily. The bladder was evacuated of a moderate amount of bloody urine. The bladder mucosa was normally pale. No stones, tumors, ulcers, diverticula or other abnormalities were noted. The ureteral orifices were normal. Clear urine was seen to spurt from the left ureter, bloody urine from the right. The right ureter was easily catheterized.

A flat plate of the abdomen was negative except for slight scoliosis of the lumbar spine toward the right. No stones were seen. By intravenous pyelograms the dye was excreted promptly from both kidneys, outlining normal pelvis and calyces on the left. On the right side the calyces were normal in appearance, but the pelvis was slightly larger than the one on the left; there was no appreciable dilatation, however. Retrograde pyelographic filling showed non-dilated kidney pelvis on the right; the two uppermost calyces showed unusually large pyramids, and there was slight fuzziness of the uppermost calyx.

He continued to pass bloody urine. On the day after admission an operation was performed.

DIFFERENTIAL DIAGNOSIS

DR. SYLVESTER B. KELLEY: The urologist takes blood cells in the urine very seriously. It has been my suspicion that my medical confreres consider microscopic blood in the urine somewhat lightly, assuming that a man may have inflammation of the urinary tract or a mild nephritis. But urologists believe that hematuria is still the best indication of tumor along the urinary tract, of stone, of tuberculosis or of an inflammatory reaction in the bladder or prostate. This man apparently had been well until two days before admission. The sudden disappearance of pain is unusual in a case with a stone in the urinary tract. The fact that the pain passed away suggests it may have been due to a blood clot that caused temporary obstruction as it was descending through the narrow portions of the ureter. I cannot account for the disappearance of pain after the heavy evening meal. It seems to me a coincidence rather than a factor of any significance in his discomfort.

"He was awakened from a sound sleep by another episode of right lower-quadrant pain." That suggests another clot from the kidney during the night. When he awoke he passed urine intimately mixed with bright-red blood. I think the word "intimately" is an excellent description. It helps the urologist a great deal to know whether the blood is mixed with the whole quantity of urine or whether the bleeding is initial or terminal. Initial hematuria frequently is associated with inflammatory conditions of the prostate. But with clear urine at the beginning of micturition, and a few drops of blood at the end of the stream we think of a pathologic lesion in the bladder — an acute inflammatory reaction or papilloma. As the bladder contracts it squeezes the lesion and causes it to bleed.

It is of some significance that the family and past histories were negative. When I have a patient with hematuria and pain in the side I go into the history in detail. Very frequently, for example, I find in patients with urinary calculi that

there has been an excessive ingestion of food containing large amounts of calcium, such as milk and cheese. Most recently I have seen a girl who took on her own responsibility a large amount of calcium for some dermatologic condition, and who subsequently developed a stone in the kidney.

The physical examination is helpful in that it reveals a well-developed individual in no apparent distress. The development suggests that he had no tuberculosis. The patient with hematuria frequently looks rather washed out. One often thinks of kidney tumor as presenting the symptoms of pain, a mass in the upper quadrant and hematuria; it should be pointed out, however, that pain is a relatively late manifestation, being the result of necrosis or infection. I am a little skeptical of the observation that the pain followed the course of the ureter. Many attacks of renal colic are associated with pain, localized in the right lower quadrant at a spot which Dr. J. D. Barney once described. If one draws a line between the anterior superior spine of the ilium to the umbilicus, bisects it and then goes downward at a right angle for 2.5 cm. one comes to Barney's point.

The blood pressure was normal, and this, taken with the rest of the picture, makes us fairly sure there was no medical cause for the hematuria, such as nephritis. The red-blood-cell count was normal. I think the ++++ albumin test is a little misleading and undoubtedly due to the large amount of blood in the urine.

Cystoscopy revealed very little. It is quite significant, however, that clear urine was seen to spurt from the left and blood from the right ureter. That is the great advantage of doing a cystoscopy at the time of bleeding. Catheterization is of some significance. While it sometimes is possible to slip a catheter past a ureteral stone, the latter usually obstructs the passage of an instrument from below.

The fact that no stone was seen in the plain x-ray film helps a little. In such a plate one frequently overlooks calculi which are composed of uric acid or which lie in front of the pelvis or spine; therefore a flat plate is not necessarily conclusive. The intravenous pyelogram indicated good function on the right side, but a slightly dilated pelvis. I should attribute this dilatation to blood clot in the kidney pelvis.

I attach great importance to the fact that there was slight fuzziness in the upper calyx. That suggests a tumor growing from the calyx down toward the pelvis. If it had been due to tuberculosis one would not find fuzziness but probably a dilatation of the calyx.

The man continued to pass blood, and an operation was performed. He was rather young for a renal tumor to occur, the majority of them coming between forty and fifty. There is no evidence of tuberculosis either in the history or physical findings, and I do not believe there was a stone because there was no evidence of obstruction of the ureter and subsequent dilatation. There is no evidence of nephritis from the x-ray description. I should say that this man had a carcinoma originating in the upper calyces of the kidney.

Dr. Holmes may offer some suggestion.

Dr. George W. Holmes: I hope I may help you a little. Here is the defect described, if one may call it defect. Apparently the upper calyx is one of these bifid affairs with a long narrow infundibulum. The portion connecting it with the pelvis is definitely narrowed and constricted. Usually we should expect another calyx in this region, but there is no indication of it here, not even irregularity in outline. I am not justified in saying that there is a blocked-off calyx. It might be an anatomic variation. The ureter is well filled, with no sign of dilatation or obstruction. In the plain film there is nothing to suggest stone, and the kidneys are normal in size. I should like to take issue with Dr. Kelley on his statement about stones. It is true that radiologists overlook them, but their shadows are usually in the films and can be seen if looked for carefully. Dr. H. O. Petersen reviewed 100 cases from the hospital not long ago. While it is true that negative reports were made where stones were present in a considerable number of cases, on re-examination, knowing that there were stones, he was able to find them in all but 2 cases.

Dr. Kelley: I stand corrected.

Dr. Tracy B. Mallory: Dr. Smith, you might tell us your impressions and findings.

Dr. George G. Smith: I operated on this man because I believed that the definite scallop in the outline of the upper border of the pelvis was significant of a pressure defect, and because of the apparent slight dilatation and a filling defect in the upper calyx, together with a hematuria. I was not at all sure that he had a tumor of the kidney but believed that there was a strong probability and that it would be much better to explore him and, if I found an early tumor, take the kidney out, than it would be to wait until the diagnosis was absolutely certain. So I operated on him with a diagnosis of probable tumor of the kidney.

At operation a fairly normal looking kidney came into view except that on the anterior surface there was a cyst which extended from the hilus to the periphery. It was about 25 cm. wide and apparently occupied the entire parenchyma on that side. I was uncertain for the moment whether that explained the whole thing and whether it

would be better to leave the kidney in, but on palpating the kidney carefully I felt a very hard area buried in the parenchyma just above the hilus and just below the cyst. That was difficult to explain, but it was suggestive enough of tumor so that I removed the kidney.

Clinical Diagnosis

Right renal calculus?
Renal cyst?
Renal tumor?

Dr. Kelley's Diagnosis

Papilloma of right kidney pelvis.

Anatomical Diagnosis

Tuberculosis of kidney.

Pathological Discussion

Dr. Mallory: The kidney presented a rather unusual appearance. When it was sectioned we found two spherical, slightly white nodules that seemed rather fibrous in character, neither of them particularly suggestive of tumor; nor did either of them show obvious caseation. With a little more exploration a third nodule was discovered at the upper pole of the kidney, and this was frankly caseous in the center. On microscopical examination all three nodules proved to be tuberculous, and there was slight tuberculous erosion of the tips of a couple of pyramids; but the major lesion consisted of these three circumscribed solitary tubercles, which grossly had the appearance of tumor.

Dr. Holmes: It is not surprising under the circumstances that the pyelogram was very misleading. I cannot remember ever having seen renal tuberculosis in this region.

CASE 26132

Presentation of Case

A fifty-year-old Russian housewife was admitted complaining of abdominal pain.

One week before entry, following a banquet, the patient experienced a sensation of mid-epigastric fullness, which radiated around both costal margins to the back. Removal of her corset afforded considerable relief and, except for malaise, the patient felt well during the next two days. Four days prior to admission she was awakened in the morning with dull aching pain along the lower rib margins on both sides, radiating to the right shoulder blade. She was unable to put on her corset because of tenderness in the right upper abdomen. The tenderness became exquisite, and two days before coming to the hospital the patient noted a lump in the right upper quadrant. There was no nausea, vomiting or colicky pain. Bowel movements, which had always occurred regularly daily, became costive during the week of illness. The upper abdominal pain persisted until entry.

The past history was noncontributory.

Physical examination showed a well-developed and nourished woman lying comfortably in bed. The lungs were clear. The heart was not enlarged, but a soft blowing systolic murmur was heard in the third left interspace. The blood pressure was 175 systolic, 100 diastolic. The abdomen was soft, but there was slight tenderness in the right upper quadrant. A smooth mass, evidently liver, with a sharp edge, extended four fingerbreadths beneath the costal margin from the epigastrium laterally into the right flank. Attached to it in the midclavicular line was a prominent, firm, walnut-sized knob. The remainder of the examination was negative.

The temperature, pulse and respirations were normal.

Examination of the urine showed a specific gravity of 1.030, with a slight trace of albumin; a green precipitate was produced by Benedict's test, and the sediment was negative. The blood showed a hemoglobin of 90 per cent and a white-cell count of 10,150. The nonprotein nitrogen of the blood was 26 mg. per 100 cc. The blood sugar was 246 mg. per 100 cc., and the carbon-dioxide combining power 55.3 vol. per cent.

A plain x-ray film of the abdomen showed an ovoid mass of calcification just above the hepatic flexure of the colon. The mass measured 5 by 3.5 cm. and was not homogeneous, the denser portion being in its center. A Graham test showed no filling of the gall bladder. With the patient standing, the area of calcification changed its shape and exhibited a definite fluid level, 4.5 cm. in width; the denser portion of the shadow was there in the lower part of the mass.

Two days after entry a laparotomy was performed.

Differential Diagnosis

Dr. Richard H. Wallace: This fifty-year-old housewife had been quite well until one week before admission, when she had mid-epigastric fullness which radiated around both costal margins to the back. This episode suggests the onset of gallstone symptoms, without, on this first attack, residual symptoms to indicate complicating inflammation. However, recurrence of pain in this region, radiating to the back with increasing severity, and persistence of tenderness and pain for four days are strongly suggestive of obstruction of the cystic duct and inflammation of the gall bladder. We must, however, consider subacute perforation of a peptic ulcer and perihepatitis. Cirrhosis is

possible, but congested liver unlikely without other positive findings of heart failure.

Incidentally, mistaking perihepatitis for acute cholecystitis is a fairly common error, but usually occurs in cases in which there is more tenderness and spasm and the gall bladder is not felt. In this case the palpation of a mass below the liver edge is good confirmatory evidence of cholecystitis.

The blood sugar is not reported as a fasting specimen but even so the patient must have been diabetic. Since the pancreas is under suspicion we should mention pancreatic duct stone and pancreatitis, but there is no record of tenderness posteriorly to support either diagnosis. I do not believe diabetes plays an important part in her illness, but gallstones and acute cholecystitis are commoner in diabetics than in non-diabetics. The normal temperature and pulse and the white count of 10,000 with a four-day story probably mean that the gall bladder was not really acutely inflamed, but they are quite consistent with cystic duct blockage and a tense edematous gall bladder. However it is frequently difficult to correlate the acute or subacute gall bladder found at operation with the history, physical examination and laboratory data. There is no mention of jaundice, and the single attack of persistent pain rather than repeated attacks of colic is against the likelihood of finding a stone of the common duct. In a recent review[1] of the cases of common-duct stone in this hospital, 37 per cent of them were found in the absence of jaundice. In this group the most reliable point in the history was colicky pain recurring every week or at more frequent intervals.

The x-ray films showed a mass of calcification in the right upper quadrant. Presumably there had been no previous examination with barium or other opaque media. A calcified mass in this region might be a calcified hematoma, lymph node, echinococcus cyst or even tumor, and of course might be a gallstone or a kidney stone. I believe we can rule out all these possibilities, however, as they are all solid masses, whereas the films showed change in shape and a fluid level with change of position. The Graham test showed no filling of the gall bladder, and I assume it did not empty with a fatty meal. In addition the denser portion of the shadow shifted to the lower part of the mass. This must mean fluid rich in calcium or other radio-opaque material confined to a sac. I know of only one condition which gives this picture, and this is rarely recognized preoperatively.

The two most recent articles I can find are in the German literature.[2, 3]

This case, I believe, had all the essentials of the disease. The first essential is cystic-duct obstruction, which probably has been present long before the initial symptoms as it is a gradual process. Pain then occurs with the distention of the gall bladder. Finally comes the palpable gall bladder, which is not really tender since acute inflammation is not a part of the picture. The x-ray findings are characteristic, and the important points are just as described — a calcified mass, as seen in a plain film, which, with change of the patient's position, has a change of shape and a definite fluid level with the denser portion of the shadow in the lower part of the mass. If cholesterin or cholesterin-calcium stones are present, they float on top of the heavy fluid which is chiefly 85 to 95 per cent calcium carbonate and is called "chalk bile" or "lime-water bile."

The unopened organ should have the appearance of a hydrops of the gall bladder with cystic duct obstruction, and I believe the opened specimen should show no bile but a white liquid composed chiefly of salts of calcium.

Preoperative Diagnoses

Cystic duct stone.
Hydrops of gall bladder ("milk-of-calcium" bile).

Dr. Wallace's Diagnosis

"Chalk bile" gall bladder.

Anatomical Diagnoses

Chronic cholecystitis.
Cholelithiasis.
Hydrops of gall bladder (calcium-milk bile).

Pathological Discussion

Dr. Tracy B. Mallory: The distinctly unusual x-ray findings in this case permit, if one knows how to interpret them, a diagnosis of exceptional accuracy, which Dr. Wallace has just made. The patient was operated on by Dr. Edward L. Young, who found a slightly dilated, thickened gall bladder, which was completely obstructed by two stones in the cystic duct. It was removed without difficulty, and the common duct was explored and found to be negative. On opening the gall bladder a hydrops was found. There was about 50 cc. of colorless fluid which contained a thick sediment of white chalky material. A single small calcium stone 5 mm. in diameter was found, and the remaining particles were of microscopic size. The wall of the gall bladder showed definite fibrous thickening and a slight inflammatory reaction.

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DIRECTORY OF MEDICAL SPECIALISTS

With the publication of the *Directory of Medical Specialists** there is now available a list of certain practitioners of medicine and surgery who have been judged by their elected representatives to be worthy of isolation from the general mass of their co-practitioners. They have demonstrated to the satisfaction of various examining boards that they have more than usual ability, or if one prefers, a minimal acceptable ability, to practice their chosen specialty, and have agreed to limit their practice to that particular field. Such a procedure and such a segregation cannot be commended too highly. It is in line with the other great steps that have been taken in the past by the medical profession for the protection of the public, and particularly supplements the now general recognition of the fact that hospitals are the best places for sick people, and the increasingly common requirement that hospitals have some sort of closed-staff control.

A brief study of the life history of these two latter reforms in medical practice demonstrates at once, however, that neither reached its greatest usefulness until after the public — that is the patients — had been educated. Time and experience had to accumulate before the education took effect. So today, before the full public worth of this latest reform movement within the medical ranks can be attained, time and experience must again accumulate and the public must again be educated up to the point of acceptance.

The truism that anything that is worth doing at all is worth doing well should nevertheless be taken to heart by all originators of reform or educational movements. In particular this applies to the examinations given by the various American boards and to the educational requirements that must precede such examination. Reports of the examinations have already led to ridicule of their content and suggest that the examiners have on occasions been more interested in limiting the number of certificate holders than in determining the fitness of the individual candidate. This ridicule is quite intangible and is always denied, but nevertheless exists and is harmful. It is doubly harmful because it is unnecessary. This movement is too valuable to be spoiled by the thoughtlessness and narrow-mindedness of a few examiners, and more care should be taken to see that examinations demonstrate the candidates' fitness to practice rather than the examiners' special knowledge.

In reference to the other criticism noted above, it should be evident and emphasized that any movement looking toward better medicine and surgery for the public must be applicable to the profession as a whole and not to only a chosen few if there is to be any general support for the movement. Pre-examination requirements, for example, that deny certificates as surgeons to all medical-school graduates until after they have spent five to seven additional years in a hospital will go far to defeat their own end. While it is

**Directory of Medical Specialists: 1939.* Edited by Paul Titus. 1573 pp. New York: Columbia University Press, 1940.

acknowledged that certain types of surgery require extensive training and wide experience, most surgery has been, is now and will continue to be done by the man whose training has included no more than two years in the hospital. Furthermore, such surgery is done well in almost every instance because it is of the type that does not require the longer kind of specialized training. This must be accepted as the public's present point of view because otherwise all practicing surgeons would be starving. Even if it were desirable, which is debatable, to change that point of view in such a way as to allow the practice of surgery to lie only or almost only in the hands of those whose training has been of a type to permit them to do the exceptional surgery, education of the population at large is still required. Again time and experience must accumulate.

Less time and less experience will be necessary to consummate the reformers' desirable end, however, if a chance is provided to examine with care and at leisure each facet of the proposed change. This is infinitely preferable to forcing it on the public, with the injunction to accept it because the medical profession says it is good.

ANTON von EISELSBERG

THE death of Anton von Eiselsberg, of Vienna, in 1939 removed an important figure from the group of general surgeons who were particularly adept in operating on the nervous system. Beginning in 1900 at the university clinic at Königsberg with an interest in the then new x-ray and having published one of the early atlases on the subject, von Eiselsberg was soon recognized as a brilliant man and became professor of surgery in 1901, at the age of forty-one, at his old school in Vienna where he had been trained by Billroth. Here he worked until he became professor emeritus in 1931. His principal work was in relation to thyroid disease and thyroid surgery, although during the World War he became one of the leading neurosurgeons in Germany. His chief work was his *Lehrbuch der Chirurgie* (Berlin, 1930). Other important writings were: *Atlas klinisch: Wichtiger Röntgenphotogramme* (Berlin, 1900) with Ludloff; "Die Krankheiten der Schilddrüse" (*Deutsche Chirurgie* **38**: 1–259, 1901); "Rückenmark-, Wirbel-, und Kreuzbeinschüsse" in *Handbuch der Aerztlichen Erfahrungen im Weltkriege, 1914–1918,* Band 1 (Leipzig, 1922).

MEDICAL EPONYM

BILLROTH OPERATION

Professor Theodor Billroth (1829–1894), of Vienna, in an open letter to Dr. L. Wittelshöfer, dated February 4, 1881, and published in the *Wiener medizinische Wochenschrift* (**31:** 162–165, 1881), described the occasion of his first resection of the stomach. Part of the letter is translated as follows:

> All my assistants were impressed with the great importance of our task: there was not the slightest hitch, not a moment's unnecessary delay.
>
> The easily movable tumor, lying in the right upper quadrant, was apparently as large as a medium-sized apple. Transverse incision about 8 cm. in length through the abdominal wall over the tumor, which was exposed with difficulty because of its size. It was then revealed as a partly nodular, partly infiltrated carcinoma of the pylorus involving more than a third of the lower end of the stomach. Lysis of adhesions to the mesentery and transverse colon. All vessels tied off before division with the least possible loss of blood. Complete delivery of the tumor upon the abdominal wall. Posterior incision through the stomach 1 cm. beyond the infiltrated portion. Then a similar incision through the duodenum. An attempt to approximate the cut edges showed the possibility of union. Six stitches through the edges of the incision; sutures were not yet tied, but used only to hold the edges in situ. Another incision through the stomach diagonally from above downward and outward along the course of, but constantly 1 cm. away from, the infiltrated portion of the stomach wall. . . . First closure of the diagonal stomach incision from below upward until the opening was only large enough so that the duodenum could be fitted to it. Then complete removal of the tumor from the duodenum, 1 cm. beyond the infiltrated area, by means of an incision parallel to that in the stomach (as in an oval amputation). Exact approximation of the duodenum to the opening left in the stomach. In all, some fifty sutures with Czerny's carbolized silk. Cleansed with 2 per cent carbolic acid solution. Re-examination of the sutures. A few auxiliary sutures placed in apparently weak spots. Reposition in the abdominal cavity. Closure of the abdominal incision. Abdominal binder.
>
> The operation had taken, together with the slowly administered narcosis, one and a half hours. No syncope, no vomiting, no post-operative pain. . . . The patient slept throughout the greater part of the night with the aid of a small dose of morphine. . . .
>
> *Numquam retrorsum* . . . is now my motto.
>
> R. W. B.

MASSACHUSETTS MEDICAL SOCIETY

SECTION OF OBSTETRICS AND GYNECOLOGY*

RAYMOND S. TITUS, M.D., *Secretary*
330 Dartmouth Street
Boston

SEPSIS FOLLOWING CESAREAN SECTION

Mrs. M. Z., a twenty-two-year-old primipara, was admitted to the hospital October 29, 1933, three hours after the onset of labor. A vaginal examination had been performed at home, at which time the doctor found a floating head.

The patient's health had always been good. She gave no history of system diseases or of serious contagious diseases. There had been no operations in the past. Catamenia had always been irregular, occurring every twenty-five or thirty-two days, and were scant in amount of flow. The last menstruation began January 18, the expected date of confinement being October 25.

On entry to the hospital the patient had labor pains coming at five-minute intervals. The general physical examination was negative. The heart was not enlarged; there were no murmurs. The pulse rate was 106. The blood pressure was 142 systolic, 82 diastolic. Abdominal examination revealed uterine contractions of moderate severity, which lasted forty seconds. There seemed to be a full-term normal pregnancy. The head was overriding the symphysis to a moderate degree; the position was LOP. The fetal heart was regular in action; the rate was 140. The pelvic measurements were as follows: I.C. 28 cm.; I.S. 25.5 cm.; E.C. 19.5 cm.; I.T. 9.5 cm. Rectal examination revealed the cervix to be dilated so as to admit three fingers. The amniotic sac bulged through the external os. The cervix was completely effaced.

The patient was given Nembutal and scopolamine and allowed to proceed in labor. Five hours after entry and eight hours after the onset of labor vaginal examination with aseptic technic disclosed the cervix to be fully dilated, the head to be high and the true conjugate to be 8 cm. An immediate operation was performed under nitrous oxide, oxygen and ether anesthesia. The baby was delivered through a Kerr incision, and weighed 5 pounds, 14 ounces; it was in good condition and was easily resuscitated. The uterine cavity contained yellowish-green material with a very foul odor. A culture was not taken at that time.

A few hours after the operation the patient had a temperature of 102.8°F. and was given a clysis. The day following operation she passed a foul-smelling yellowish clot, which looked like infected secundines. She was therefore given ergot and was placed in the high-Fowler position.

During the first five days after operation the temperature ranged from 100 to 102°F. and the pulse fluctuated between 100 and 120. On the seventh postpartum day the temperature went to 105°F. rectally, and the pulse rate to 140. A transfusion of 350 cc. of citrated blood was given. Another transfusion was given on the tenth day. The abdominal wound drained purulent material, and finally completely broke down so that the uterus could be visualized in the bottom of the septic wound. A culture taken from the wound showed streptococci, staphylococci and colon bacilli. Due to the marked peritonitis from which the patient was suffering she was Ochsnerized. Daily hypodermoclyses and injections of intravenous glucose solution were given. Transfusions were repeated every three or four days.

Two weeks after operation the patient's chest revealed bilateral bronchopneumonia by physical examination, a finding which was corroborated by x-ray. This subsequently subsided.

Abscess cavities eventually developed in both flanks of the abdomen. The one on the left was incised by means of a stab wound just below the costal margin. The abscess in the right lower abdominal quadrant was broken into through the abdominal incision. The wound eventually became free of infection and granulated in under treatment with Dakin's solution.

Two months following the cesarean operation and after two weeks of normal temperature the abdominal wound was repaired by a secondary closure. Parallel incisions were made in the rectus sheaths 1 cm. from the edge of the defect. The inner edges of the incisions were turned toward the mid-line and were approximated by catgut sutures. The outer cut edges were then sutured together, a procedure which gave two layers of fascia over the granulating area. There was considerable tension, but the wound healed solidly and the patient was discharged approximately three months after entry.

On December 27, 1937, the patient was admitted to the hospital for another cesarean section. The abdominal wound had remained intact throughout this pregnancy. At operation there were no adhesions in the peritoneal cavity. The classical incision was used. The patient had an afebrile convalescence and was discharged in good condition on the seventeenth postpartum day.

Comment. This case of uterine sepsis and peritonitis followed cesarean section. It is unfair to attribute the infection to the test of labor which

*A series of selected case histories by members of the section will be published weekly. Comments and questions by subscribers are solicited and will be discussed by members of the section.

this patient was given inasmuch as it lasted only eight hours and inasmuch as the membranes had not ruptured. It is barely possible that the infection was introduced by the examination performed before the patient reached the hospital. The low cervical operation did not prevent infection. There is no evidence in the record that a temperature existed before delivery, although a temperature of 102.8°F. was noted a few hours afterward. It would have been interesting to have had a culture from the yellowish-green material with a very foul odor which was found in the uterus at the time of operation. Had this culture been positive, one would then have known that an infection was present before delivery. The low-grade temperature reported for the first five days after operation leads one to infer that the infection was at that time solely uterine. The temperature rise to 105°F. on the seventh postoperative day suggests either that an abscess was forming in the uterus or that there was an extension into the peritoneal cavity. Sulfanilamide might have shortened very materially the convalescence. The secondary operation two months later for the closure of the abdominal wound was successful, as proved by the scar remaining well healed without hernia during the subsequent pregnancy.

It is doubtful under the circumstances whether anyone would have been justified in doing any form of extraperitoneal operation on this case as the record reveals no definite evidence that the operation was being performed on an already infected uterus. In cases where the test of labor has been prolonged beyond twelve hours, particularly with ruptured membranes, some form of extraperitoneal operation is probably the conservative procedure. This case illustrates again the value of repeated small transfusions in septic cases of long duration.

MEDICAL POSTGRADUATE EXTENSION COURSES

The following sessions, given by the Massachusetts Medical Society in co-operation with the Massachusetts Department of Public Health, the United States Public Health Service and the Federal Children's Bureau, have been arranged for the week beginning March 31:

BERKSHIRE

Thursday, April 4, at 4:30 p.m., at the Bishop House of Mercy Hospital, Pittsfield. Gonorrhea in the Female. Instructor: Sylvester B. Kelley. Harry G. Mellen, *Chairman.*

BRISTOL SOUTH (Fall River Section)

Tuesday, April 2, at 4:30 p.m., at the Union Hospital, Fall River. Pneumonia. Instructor: Charles A. Janeway. Howard P. Sawyer, *Chairman.*

FRANKLIN

Thursday, April 4, at 8:15 p.m., at the Franklin County Hospital, Greenfield. Common Problems of Neurology: Indications for lumbar puncture. Instructor: H. Houston Merritt. Halbert G. Stetson, *Chairman.*

HAMPDEN

Thursday, April 4, at 4:00 p.m., at the Academy of Medicine, Professional Building, 20 Maple Street, Springfield, and at 8:15 p.m., in the Outpatient Department of the Skinner Clinic, Holyoke Hospital, Holyoke. Head and Spine Injuries. Instructor: Walter R. Wegner. George L. Schadt, *Chairman.*

HAMPSHIRE

Thursday, April 4, at 4:15 p.m., in the Nurses' Home of the Cooley Dickinson Hospital, Northampton. Indications for Cesarean Section. Instructor: Judson A. Smith. Warren P. Cordes, *Chairman.*

MIDDLESEX SOUTH

Tuesday, April 2, at 4:30 p.m., at the Cambridge Hospital, 330 Mt. Auburn Street, Cambridge. The Use of Biological Preparations in Pediatric Practice. Instructor: Richard M. Smith. Dudley Merrill, *Chairman.*

NORFOLK

Thursday, April 4, at 8:30 p.m., at the Norwood Hospital, Norwood. Cardiovascular Disease: Eleven important questions about heart disease and their answers. Instructor: Marshall N. Fulton. Hugo B. C. Riemer, *Chairman.*

NORFOLK SOUTH

Monday, April 1, at 8:30 p.m., at the Quincy City Hospital, Quincy. Head and Spine Injuries. Instructor: Walter R. Wegner. David L. Belding, *Chairman.*

PLYMOUTH

Tuesday, April 2, at 4:00 p.m., in the Nurses' Home of the Brockton Hospital, Brockton. Cardiovascular Disease: Eleven important questions about heart disease and their answers. Instructor: James M. Faulkner. Walter H. Pulsifer, *Chairman.*

SUFFOLK

Thursday, April 4, at 4:30 p.m., in John Ware Hall, Boston Medical Library, 8 Fenway, Boston. Syphilis in Pregnancy and the Offspring. Instructor: C. Guy Lane. Reginald Fitz, *Chairman.*

DEATHS

GALLAGHER — JOHN H. C. GALLAGHER, M.D., of Chicopee, died March 19 at St. Petersburg, Florida. He was in his sixtieth year.

He was born in Leominster and attended the University of Maryland, receiving his degree from Baltimore Medical College in 1903. Before starting practice in Chicopee he spent a year at the Providence Hospital in Holyoke. During the summer of 1907 he studied at the University of London and also at Vienna. In 1910 he received the appointment as medical examiner of the Fifth Hampden District. Dr. Gallagher also studied at the Massachusetts Eye and Ear Infirmary, and was former school physician in Chicopee. He was a past president on the staff of the

Mercy Hospital and had retired from active practice in 1935.

Among his affiliations were fellowships in the Massachusetts Medical Society and the American Medical Association, and memberships in the American Academy of Ophthalmology and Oto-Laryngology and the New England Otological and Laryngological Society.

His widow, two sons, his mother, three sisters and three brothers survive him.

LAMOUREAUX — Joseph E. Lamoureaux, M.D., of Lowell, died March 16. He was in his seventy-second year.

Born at Chambly, Quebec, he received his education at the College of St. Charles Borromee in Sherbrooke. He received his degree from the University of Montreal Faculty of Medicine in 1893. Dr. Lamoureaux started practice in Lowell immediately after his graduation. For nine years he was a member of the Public Health Council of Massachusetts and a member and president of the former Lowell Corporation Hospital staff. He was the first president of the staff of St. Joseph's Hospital in Lowell. Dr. Lamoureaux was a member of the Massachusetts Medical Society and of the American Medical Association.

His widow, two sons, two daughters and seven grandchildren survive him.

MIDDLETON — Willis J. Middleton, M.D., of East Acton, died March 14. He was in his seventy-third year.

Born in Boston he received his degree from Tufts College Medical School in 1901. Dr. Middleton taught anatomy at Tufts College Medical School for five years. A specialist in obstetrics, he taught that subject at the Quincy City Hospital, where he was a staff member for many years. Dr. Middleton was a former member of the Massachusetts Medical Society.

A son, a daughter and six grandchildren survive him.

GREEN LIGHTS TO HEALTH

April — May — June

SPONSORED BY THE MASSACHUSETTS MEDICAL SOCIETY AND THE MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

Courtesy WAAB — Tuesdays, 9:45 A.M.

April 2. So You Are Going to the Hospital! John P. Monks.
April 9. Choosing a Camp for Your Child. Warren R. Sisson.
April 16. Hay Fever. I. Chandler Walker.
April 23. What a Health Examination Means. Michael E. Murray.
April 30. Protecting the Teeth of the Child. Paul K. Losch.
May 7. Headache. H. Houston Merritt.
May 14. Alcoholism. Merrill Moore.
May 21. From What Diseases Should Children Be Protected? Edwin H. Place.
May 28. When to Call the Doctor. James M. Faulkner.
June 4. Sulfanilamide: Medicine's new lifesaving drug. Charles A. Janeway.
June 11. Are Vacations Necessary? Alfred Kranes.
June 18. Why Doesn't Tuberculosis Disappear? Henry D. Chadwick.
June 25. Important Facts about the Fourth. Robert H. Aldrich.

MISCELLANY

RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS, JANUARY, 1940

DISEASES	JANUARY 1940	JANUARY 1939	FIVE-YEAR AVERAGE*
Anterior poliomyelitis	2	0	0
Chicken pox	2328	1433	1839
Diphtheria	35	21	39
Dog bite	602	509	550
Dysentery, bacillary	34	20	6
German measles	86	67	251
Gonorrhea	342	380	460
Lobar pneumonia	620	618	739
Measles	961	1985	1890
Meningococcus meningitis	3	6	9
Mumps	562	771	902
Paratyphoid B fever	5	0	0
Scarlet fever	565	793	1004
Syphilis	431	400	439
Tuberculosis, pulmonary	196	250	282
Tuberculosis, other forms	28	29	30
Typhoid fever	8	8	6
Undulant fever	2	8	4
Whooping cough	625	953	983

*Based on figures for preceding five years.

Rare Diseases

Anterior poliomyelitis was reported from: Boston, 1; Winchester, 1; total, 2.

Diphtheria was reported from: Arlington, 1; Boston, 2; Cambridge, 8; Chelsea, 2; Danvers, 3; Fall River, 5; Lawrence, 8; Methuen, 3; North Attleboro, 1; Revere, 1; Worcester, 1; total, 35.

Dysentery, bacillary, was reported from: Beverly, 3; Boston, 2; Cambridge, 6; Greenfield, 2; Lynn, 4; Medford, 1; Natick, 1; Northampton, 1; Quincy, 1; Reading, 2; Salem, 5; Somerville, 1; Sterling, 1; Tewksbury, 1; Wenham, 1; Worcester, 1; Wrentham, 1; total, 34.

Meningococcus meningitis was reported from: Boston, 1; Medford, 1; North Reading, 1; total, 3.

Paratyphoid B fever was reported from: Boston, 1; Holyoke, 1; Lawrence, 1; Newburyport, 1; Pittsfield, 1; total, 5.

Pellagra was reported from: Boston, 3; total, 3.

Septic sore throat was reported from: Belmont, 1; Boston, 13; Cambridge, 2; Fall River, 1; Lawrence, 1; Merrimac, 1; Northfield, 1; Oxford, 2; Plymouth, 1; Waltham, 1; Winchester, 1; Wrentham, 1; total, 26.

Tetanus was reported from: Worcester, 1; total, 1.

Trachoma was reported from: Boston, 1; Bridgewater, 1; total, 2.

Trichinosis was reported from: Franklin, 1; total, 1.

Typhoid fever was reported from: Boston, 2; Norton, 1; Norwood, 1; Peabody, 1; Rockport, 1; Swampscott, 1; Uxbridge, 1; total, 8.

Undulant fever was reported from: Freetown, 1; Pittsfield, 1; total, 2.

The incidence of chicken pox was higher than has ever been reported.

Bacillary dysentery, primarily of the Sonne type, continued to be prevalent, the level being slightly higher than that of last month.

The level of reported cases of paratyphoid B fever was slightly higher than it has been for the past three months.

There was a continuation of the slight upward trend of diphtheria cases, the incidence being higher than it has been since January, 1936.

The reported incidence of measles was well below the five-year average.

Scarlet fever had its lowest January incidence since 1919.

German measles, meningococcus meningitis, pulmonary tuberculosis and whooping cough were all reported below the five-year average.

There was nothing remarkable in the reported incidences of anterior poliomyelitis, gonorrhea, syphilis, lobar pneumonia and mumps.

Typhoid fever and undulant fever were reported at expected levels.

REPORT OF MEETING

NEW ENGLAND ROENTGEN RAY SOCIETY

A meeting of the New England Roentgen Ray Society was held at the Beth Israel Hospital on December 15, 1939, with Dr. Samuel A. Robins presiding.

The first speaker was Dr. Monroe J. Schlesinger, whose subject was "The Roentgenological Visualization of the Coronary Arteries." Attempts to study the configuration of these vessels post mortem were initiated in 1896 and perfected by Gross in 1921. Dr. Schlesinger, however, essayed to dissect the heart to duplicate the diaphragms of Spaltholz, so that the coronary arteries might be visualized in one plane. The speaker described his two-colored injection mass and the manner of such dissection of the unfixed heart. Although of the 300 organs thus treated no two showed similar arterial patterns, one was able to place them in three general categories. The first group, which contained 50 per cent of the specimens, had a predominance of the right coronary artery, which crossed to the left side as well as to the posterior septum. In such hearts, two thirds of the infarcts were healed. The second group consisted of fairly well-balanced right and left coronary systems and accounted for about 35 per cent of the hearts. In this type there were fewer infarcts, and these were always healed at autopsy. The last group showed a left coronary preponderance, which was present in about 15 per cent of the specimens examined. This was by far the poorest kind of circulation, with the patient dying after infarction in all cases. An important finding was the absence of any anastomoses unless there was evidence of past or present coronary narrowing or occlusion. This indicates that increase of collateral vessels is not a normal concomitant of increasing age and that occlusion is necessary for the development of such anastomoses.

The second paper, by Dr. Herrman L. Blumgart, was related to the first and was concerned with the clinical implications of these pathological findings. A correlation of the number of occlusions found at autopsy with the clinical history indicated that patients with angina pectoris had, on the whole, about twice as many damaged arteries as did those without. The severity of symptoms, however, was not always a direct corollary of the organic lesions, for cases were cited of those who carried on in an essentially normal manner despite the thrombosis of two or all three coronary arteries.

Dr. Charles G. Mixter presented evidence for "The Value of Cholangiography During Operation." The background for the use of this procedure lay in the increase in choledochostomy from about 8 to 40 per cent due to the number of recurrences following simple cholecystectomy. And since 20 to 30 per cent of these explorations are negative and there is a considerable increase of mortality and morbidity attendant on the procedure, it would be exceedingly beneficial if one could obviate the useless exploration and still be certain before completing the operation that there were no further stones present. Before discussing the results of the roentgenological method, however, Dr. Mixter asserted that cholangiography should not replace common-duct exploration when there are definite clinical indications for the latter. Three types of cholangiograms were made: a closed one before exploration, an open one after exploration but while the patient was still on the operating table, and a postoperative one during convalescence. Although the results with the closed method showed promise, the finding of stones in 2 of 18 cases with negative cholangiograms was considered only a fair result. The open cholangiogram, which was 94 per cent correct, was heartily endorsed.

The next paper was that of Dr. Karl Presser on "The Early Diagnosis of Prepyloric Carcinoma." The speaker emphasized that the normal rugal pattern and normal peristalsis of the stomach are functional signs dependent on the integrity of the mucosal, submucosal and muscular structures. Normal rugae may thus be lacking in the presence of submucosal lesions with a normal overlying mucosa. Dr. Presser suggested the wider use of serial spot films during the entire course of the peristaltic cycle. A comparison of superficial benign lesions and adhesions with the infiltrative lesions of carcinoma was illustrated by films. Although filling defects may be present in either type of lesion, neoplasms show characteristic abnormalities of the peristalsis, which are consistently visible and nonchanging even when present in early lesions. Any infiltrating disease may give a similar roentgenogram, and syphilis must be ruled out. Benign tumors are best differentiated by the presence of normal peristalsis during the entire cycle and on repeated examinations. Dr. Presser showed the films of three cases in which operations had been performed on the strength of x-ray findings consistent with very early prepyloric cancer; the diagnoses were not confirmed until histological examinations were completed. It was stressed that clinically early cancers often show advanced lesions by roentgenograms because of the accuracy of examining the gastrointestinal tract as a functioning organ by the latter method. Thus, the responsibility of the roentgenologist in the early diagnosis of gastric carcinoma and the importance of serial spot films during the peristaltic cycle were brought out by the speaker.

The next paper on "Changes in the Uterus Following Roentgen Therapy, Demonstrated by Uterotubography" was presented by Dr. William S. Altman. The study was based on 15 cases of menorrhagia in which the diagnoses were checked by diagnostic dilatation and curettage prior to irradiation. The same changes from muscular to fibrous tissue were observed in the aged and those subjected to roentgen therapy. The effects might be exerted on the uterus either directly or through the deleterious action of irradiation on the ovaries. Uterotubograms, before and after radiation, demonstrated marked shrinkage of the uterus. All patients experienced relief of menorrhagia within one to two months with doses of radiation varying from 800 to 3200 r, with never more than 1600 r being given in any one series. Three patients required operative intervention for symptoms other than menorrhagia. In summary, Dr. Altman stated that 1200 r was probably a sufficient dose and that the severity of the ensuing menopause was probably proportional to the amount of treatment given. The effect was best in patients with a hyperplastic type of endometrium, next best in those with subserous fibroids, and next in those with submucosal fibroids.

The final speaker was Dr. Harry F. Friedman, whose subject was "Observations on Contact Roentgen Therapy." There was a description of the apparatus employed, which enables the anode to be within 18 mm. of the lesion. The importance of the distribution rather than kind of radiation was stressed. Lesions may be naturally or artificially accessible, bladder lesions being in the latter group. The advantages as enumerated by Dr. Friedman consisted of

greater intensity with little reaction, a high dosage rate, and a low cost and short duration for the treatment. The time employed was from five seconds to six minutes, and this was cited as being particularly desirable in the treatment of oral carcinoma. About 8200 r of unfiltered radiation per minute can be delivered by the machine. One important consideration is the rapid falling off of intensity with depth, so that only 20 per cent is absorbed unfiltered at a distance of 1 cm. Single dosage, figured on that necessary to destroy the tumor, with no attention to the skin, has superseded fractional irradiation in this type of treatment. The stated prerequisite for contact roentgen therapy was an accessible lesion which was not too thick. The principle of treatment was to deliver a maximal dose to the tumor base without consideration for the skin. He added that poor permeability accounts for the lack of damage to the surrounding normal tissue.

NOTICES

BOSTON GASTROENTEROLOGICAL SOCIETY

The next meeting of the Boston Gastroenterological Society will be held in the Andrew Carney Hospital Assembly Room of the Carney Hospital on Wednesday, April 3, at 12 o'clock noon.

PROGRAM

The Treatment of Peptic Ulcer Complicated by Diabetes Mellitus. Dr. C. W. Finnerty.

Rectal Polyps: A pathological discussion. Drs. T. F. P. Lyons and M. Vidoli.

Case Discussion. Dr. A. McKay Fraser.

Achlorhydria. Dr. Louis F. Curran.

Physicians, medical students and nurses are invited.

JOSEPH H. PRATT DIAGNOSTIC HOSPITAL

Bennet Street, Boston
Lecture Hall, 9–10 a.m.

MEDICAL CONFERENCES

Tuesday, April 2 — Ewing's Sarcoma. Dr. C. P. Roberts.

Thursday, April 4 — The Use of Staphylococcal Antitoxin in Osteomyelitis with Septicemia. Dr. W. A. MacColl.

Friday, April 5 — Studies of Radio-Active Iodine in Relation to Thyroid Disease. Dr. Saul Hertz.

Tuesday, April 9 — Studies on Purpura in Relation to the Spleen and Bone Marrow. Dr. William Dameshek.

Thursday, April 11 — Diagnostic Errors. Dr. H. G. Brugsch.

Friday, April 12 — Prothrombin and Vitamin K. Dr. E. L. Lozner.

Tuesday, April 16 — The Origin, Diagnosis and Treatment of Pituitary Body Tumors. Dr. Oscar Hirsch.

Thursday, April 18 — Gastrointestinal Clinic. Drs. K. S. Andrews, H. H. Lerner and L. M. Asher.

Tuesday, April 23 — Ovarian Tumors. Dr. J. T. Smith.

Thursday, April 25 — Off the Main Road in Diabetes. Dr. J. J. Schloss.

Friday, April 26 — Small-Bowel Obstruction. Dr. L. S. McKittrick.

Tuesday, April 30 — The Soldier and His Heart. Dr. P. D. White.

Wednesday, May 1 — Hospital case presentation. Dr. J. E. Paullin.

Thursday, May 2 — Clinicopathological conference. Dr. C. S. Keefer.

Friday, May 3 — A Review of Diabetes. Dr. E. P. Joslin.

Saturday, May 4 — Hospital case presentation. Dr. J. E. Paullin.

On Wednesday and Saturday mornings throughout the month of April, Dr. S. J. Thannhauser will give a medical clinic on hospital cases.

For the week, April 29 to May 4, Dr. James E. Paullin, professor of medicine at Emory University, Atlanta, Georgia, will act as physician-in-chief, pro tem, of the Joseph H. Pratt Diagnostic Hospital. He will conduct ward rounds each morning from 8 to 9 o'clock, and give clinics on Wednesday and Saturday mornings, May 1 and 4, from 9 to 10 o'clock.

These clinics are open to the profession and medical students.

GREATER BOSTON MEDICAL SOCIETY

A meeting of the Greater Boston Medical Society will be held in the auditorium of the Beth Israel Hospital on Tuesday evening, April 2, at 8:15.

Dr. Arthur M. Fishberg, associate in medicine, Mt. Sinai Hospital, New York City, will speak on "Essential Hypertension." A discussion by Drs. Samuel A. Levine, David Davis, David Ayman and Maurice B. Strauss will follow.

WILLIAM HARVEY SOCIETY

The sixth lecture of the season sponsored by the William Harvey Society of the Tufts College Medical School will be given in the auditorium of the Beth Israel Hospital on Friday evening, April 5, at 8:00. Dr. Emil Novak, associate professor of obstetrics at the University of Maryland, will speak on "The Endocrine Influence of Certain Ovarian Tumors."

TUFTS MEDICAL ALUMNI LECTURE

The annual alumni lecture will be given at Tufts College Medical School on Wednesday, April 3, at 4:00 p.m. Colonel G. R. Callender, '08, will speak on "Diarrheal Diseases."

Physicians and students are cordially invited to attend.

CHELSEA NAVAL HOSPITAL

The staff of the Chelsea Naval Hospital will give a clinic for the Colonel Williams Chapter of the Association of Military Surgeons of the United States on Friday evening, April 5, at 8.00. The subject will be "Gastrocolic Fistulas." Refreshments will be served following the meeting.

All members of the Association and all members of different branches of the medical services of the United States are invited. Those who expect to attend are requested to notify Major Richard H. Miller, United States Reserve, South Armory, Boston, before March 30.

SOCIETY MEETINGS AND CONFERENCES

CALENDAR OF BOSTON DISTRICT FOR THE WEEK BEGINNING SUNDAY, MARCH 31

SUNDAY, MARCH 31

4 p.m. Eczema in Babies. Dr. Lewis W. Hill. Illustrated, public health lecture. Faulkner Hospital auditorium.

TUESDAY, APRIL 2

*9–10 a.m. Ewing's Sarcoma. Dr. C. P. Roberts. Joseph H. Pratt Diagnostic Hospital.

8:15 p.m. Essential Hypertension. Dr. Arthur M. Fishberg. Greater Boston Medical Society. Beth Israel Hospital auditorium.

WEDNESDAY, APRIL 3

*9–10 a.m. Hospital case presentation. Dr. S. J. Thannhauser. Joseph H. Pratt Diagnostic Hospital.

*12 m. Boston Gastroenterological Society. Carney Hospital.

*4 p.m. Diarrheal Diseases. Colonel G. R. Callender. Tufts College Medical School.

THURSDAY, APRIL 4

*9–10 a.m. The Use of Staphylococcal Antitoxin in Osteomyelitis with Septicemia. Dr. W. A. MacColl. Joseph H. Pratt Diagnostic Hospital.

7:15 p.m. Circulatory Failure. Dr. Laurence B. Ellis. New England Hospital for Women and Children.

FRIDAY, APRIL 5

*9–10 a.m. Studies of Radio-Active Iodine in Relation to Thyroid Disease. Dr. Saul Hertz. Joseph H. Pratt Diagnostic Hospital.

8 p.m. The Endocrine Influence of Certain Ovarian Tumors. Dr. Emil Novak. William Harvey Society. Beth Israel Hospital auditorium.

SATURDAY, APRIL 6

*9–10 a.m. Hospital case presentation. Dr. Thannhauser. Joseph H. Pratt Diagnostic Hospital.

*Open to the medical profession.

MARCH 29 — Luncheon meeting of the clinical staff of the Boston Dispensary. Page 514, issue of March 21.

MARCH 29 — Staff meeting. United States Marine Hospital. Page 514, issue of March 21.

APRIL 2–MAY 4 — Joseph H. Pratt Diagnostic Hospital, medical conferences. Page 561.

APRIL 5 — Chelsea Naval Hospital. Page 561.

APRIL 11 — Pentucket Association of Physicians. 8:30 p.m., Hotel Bartlett, Haverhill.

APRIL 15–17 — American Association for the Study of Goiter. Page 203, issue of February 1.

APRIL 15–19 — New England Health Institute. Page 284, issue of February 15.

APRIL 24 — Massachusetts Dental Society. Page 365, issue of February 29.

APRIL 24–26 — Scientific Session. Academy of Physical Medicine. Hotel John Marshall, Richmond, Virginia.

MAY 10–18 — American Scientific Congress. Page 1043, issue of December 28.

MAY 13 — United States Pharmacopoeial Convention. Page 202, issue of February 1.

JUNE 7–8 — American Heart Association. Page 469, issue of March 14.

JUNE 7–9 — American Board of Obstetrics and Gynecology. Page 1019, issue of June 15.

JUNE 8 and 10 — American Board of Ophthalmology. Page 719, issue of November 2.

JUNE 10–14 — American Physicians' Art Association. Page 332, issue of February 22.

JUNE 23-25 — Maine Medical Association. Annual meeting. Rangeley Lakes.

OCTOBER 21 — American Board of Internal Medicine, Inc. Page 369, issue of February 29.

DISTRICT MEDICAL SOCIETIES

ESSEX SOUTH

APRIL 3 — Page 422, issue of March 7.

MAY 8 — Annual meeting. Salem Country Club, Peabody.

FRANKLIN

MAY 14 — Franklin County Hospital, Greenfield.

HAMPSHIRE

MAY 8, at 11:30 a.m. at the Cooley Dickinson Hospital, Northampton.

MIDDLESEX EAST

MAY 15, at 12:15 p.m. at the Unicorn Country Club, Stoneham.

MIDDLESEX NORTH

APRIL 24.

JULY 31.

OCTOBER 30.

NORFOLK SOUTH

APRIL 4.

MAY 2.

PLYMOUTH

APRIL 18 — State Farm.

MAY 16 — Lakeville State Sanatorium, Middleboro.

SUFFOLK

APRIL 24 — Annual meeting in conjunction with the Boston Medical Library. Election of officers. Program and speakers to be announced later.

MAY 2 — Censors' meeting. Page 244, issue of February 8.

WORCESTER

APRIL 10 — Worcester Hahnemann Hospital.

MAY 8 — Worcester Country Club.

Meetings begin with a dinner at 6:30 p.m. and are followed by a business and scientific meeting.

BOOK REVIEWS

Textbook of Nervous Diseases. Robert Bing. Translated and enlarged by Webb Haymaker. From fifth German edition. 838 pp. St. Louis: C. V. Mosby Co., 1939. $10.00.

Dr. Robert Bing, head of the Department of Neurology at the University of Basel, Switzerland, has long been known to English-speaking physicians. His little book on *Regional Diagnosis,* which first appeared in 1909 and is now in its eleventh edition, has been widely read in its English translation. His *Textbook of Nervous Disorders,* first issued in 1913 and now in its fifth edition, has not been so well known. It is one of the great modern textbooks of neurology and perhaps takes its place in the first dozen books of its type. An English edition has long been anticipated, and one is not disappointed in the translation by Dr. Haymaker, who has changed somewhat the form of the book by taking the material out of the lecture form and putting it into various chapters. He has added considerable data in regard to anatomy and physiology. Several of the chapters have been extensively revised. In spite of this, the attractive style of Professor Bing's presentation has not been entirely lost. It is difficult to tell, moreover, where Professor Bing's part of the book ends and the translator's begins. By bringing new material and augmenting the old material, the translator has added something to the value of the book for English and American readers.

The book should be widely read for it contains much material not easily available in other textbooks. No neurologist should be without this book, as it is one of the great fundamental texts on the subject.

Epidemiology in Country Practice. William N. Pickles. 110 pp. Baltimore: Williams & Wilkins Co., 1939. $2.50.

The observation that the general practitioner is in a position to make valuable contributions to medical knowledge is commonplace, but it is always pleasant to come on a fresh demonstration of its validity. Dr. Pickles, of Wensleydale, in the North Riding of Yorkshire, gives us a book which will inevitably bring to mind William Budd's *Typhoid Fever.*

"A gipsy woman driving a caravan into a village in the summer twilight, a sick husband in the caravan, a faulty pump at which she proceeded to wash her dirty linen, and my first and only serious epidemic of typhoid," he says, "left me with a lasting impression of the unique opportunities of the country doctor for the investigation of infectious disease." That Dr. Pickles worthily makes use of his opportunities is apparent from a consideration of his technic, the conciseness and clarity of his statements of fact and the modest assuredness of his conclusions.

Just what the "epidemic catarrhal jaundice" that he so carefully studied may be, is, as he himself admits, still sub judice, but he makes out an excellent case for its reality as an entity. Epidemic myalgia, or Bornholm disease, is not only an independent discovery of his own, although originally described by an Icelandic practitioner in 1856, and subsequently by several Scandinavians, but a syndrome which in retrospect is recognizable in almost any physician's experience. An epidemic at the Massachusetts General Hospital, Boston, was described in the *Journal* in 1933 by Crone and Chapman under the title "Epidemic Pleurodynia."

Apart from its scientific value, this little volume has the added grace of being written in the cursive narrative style characteristic of the best English medical tradition.